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(FILE 'HOME' ENTERED AT 13:21:07 ON 13 JAN 2010)

FILE 'REGISTRY' ENTERED AT 13:21:15 ON 13 JAN 2010
ACT NGU971G/A

L1 SCR 2049
L2 STR
L3 253 SEA SSS FUL L2 AND L1

FILE 'LREGISTRY' ENTERED AT 13:21:34 ON 13 JAN 2010
ACT NGU971D/Q

L4 STR

L5 STR L4

FILE 'REGISTRY' ENTERED AT 13:23:42 ON 13 JAN 2010

L6 0 SEA SUB=L3 SSS SAM L5
L7 2 SEA SUB=L3 SSS FUL L5

FILE 'HCAPLUS' ENTERED AT 13:23:56 ON 13 JAN 2010

L8 1 SEA SPE=ON ABB=ON PLU=ON L7
D L8 TI AU

FILE 'LREGISTRY' ENTERED AT 13:43:38 ON 13 JAN 2010

L9 STR L4

FILE 'REGISTRY' ENTERED AT 13:46:56 ON 13 JAN 2010

L10 0 SEA SSS SAM L9

FILE 'HCAPLUS' ENTERED AT 14:02:36 ON 13 JAN 2010

L11 127 SEA SPE=ON ABB=ON PLU=ON L3

FILE 'ZCAPLUS' ENTERED AT 14:03:52 ON 13 JAN 2010

L12 QUE SPE=ON ABB=ON PLU=ON ELECTROLUMINES? OR ELECTRO#(W
)LUMINESC?

FILE 'HCAPLUS' ENTERED AT 14:04:45 ON 13 JAN 2010

L13 28 SEA SPE=ON ABB=ON PLU=ON L11 AND L12

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 11 JAN 2010 HIGHEST RN 1201890-95-0

DICTIONARY FILE UPDATES: 11 JAN 2010 HIGHEST RN 1201890-95-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

FILE HCAPLUS

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FILE COVERS 1907 - 13 Jan 2010 VOL 152 ISS 3

FILE LAST UPDATED: 12 Jan 2010 (20100112/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

HCAplus now includes complete International Patent Classification (I) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE ZCAPLUS

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FILE COVERS 1907 - 13 Jan 2010 VOL 152 ISS 3

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USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

ZCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

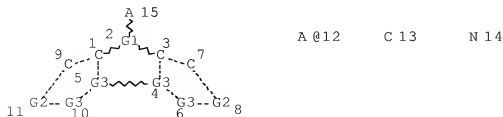
<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que stat l3

L1 SCR 2049

L2 STR



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REP G2=(1-4) 12
VAR G3=N/C
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NSPEC   IS RC      AT 13
NSPEC   IS RC      AT 15
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

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STEREO ATTRIBUTES: NONE
L3          253 SEA FILE=REGISTRY SSS FUL L2 AND L1

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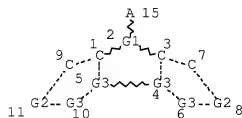
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253 ANSWERS

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=> d que stat 17
L1          SCR 2049
L2          STR

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A @12 C 13 N 14

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VAR G3=N/C
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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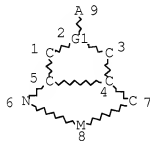
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NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L3 253 SEA FILE=REGISTRY SSS FUL L2 AND L1

L5 STR



VAR G1=N/B

NODE ATTRIBUTES:

NSPEC IS RC AT 9

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L7 2 SEA FILE=REGISTRY SUB=L3 SSS FUL L5

100.0% PROCESSED 3 ITERATIONS

2 ANSWERS

SEARCH TIME: 00.00.01

=> d l8 bib abs hitstr hitind

L8 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:1130744 HCAPLUS Full-text

DN 143:413279

TI Organic electroluminescent device material, organic electroluminescent device and display and illuminating device

IN Oshiyama, Tomohiro; Suzuri, Yoshiyuki; Kita, Hiroshi; Katoh, Eisaku

PA Konica Minolta Holdings, Inc., Japan

SO PCT Int. Appl., 68 pp.

CODEN: PIXXD2

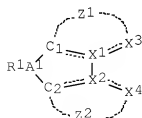
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005097940	A1	20051020	WO 2005-JP4678	200503 16
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	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1731584	A1	20061213	EP 2005-720929	200503 16
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
	US 20070196687	A1	20070823	US 2006-598971	200609 15
PRAI	JP 2004-103247	A	20040331		
	WO 2005-JP4678	W	20050316		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
GI



I

AB Disclosed is an organic electroluminescent device material which is a metal complex having a specific ligand. Also disclosed is an organic electroluminescent device using such an organic electroluminescent device material and having high luminous efficiency and long life. Further disclosed are a display and an illuminating device resp. using such an organic electroluminescent device. The organic electroluminescent device material is characterized by containing a metal complex having a ligand represented by the following general formula I.

IT 867000-99-5 867001-12-5

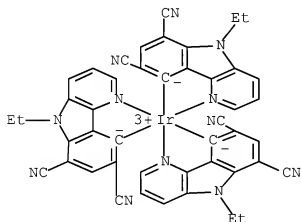
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic electroluminescent device material, organic electroluminescent

device and display and illuminating device)

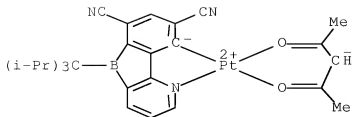
RN 867000-99-5 HCAPLUS

CN Iridium, tris(6,8-dicyano-5-ethyl-5H-pyrido[3,2-b]indol-9-yl- κ C, κ N1)- (9CI) (CA INDEX NAME)



RN 867001-12-5 HCAPLUS

CN Platinum, [6,8-dicyano-5-[2-methyl-1,1-bis(1-methylethyl)propyl]-5H-benzoborolo[3,2-b]pyridin-9-yl- κ C, κ N] (2,4-pentanedionato- κ O, κ O')-, (SP-4-3)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 74

IT 867000-82-6 867000-83-7 867000-84-8 867000-85-9 867000-88-2
867000-89-3 867000-90-6 867000-91-7 867000-92-8 867000-94-0
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867001-04-5 867001-05-6 867001-06-7 867001-07-8 867001-08-9
867001-09-0 867001-11-4 ~~867001-12-5~~ 867001-13-6
867001-14-7 867001-15-8 867001-17-0 867001-19-2 867001-21-6
867001-23-8

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(organic electroluminescent device material, organic electroluminescent device and display and illuminating device)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

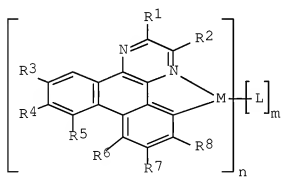
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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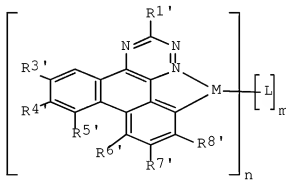
L13 ANSWER 1 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2009:1018671 HCAPLUS Full-text
DN 151:289317
TI Electroluminescent metal complexes with
dibenzo[f,h]quinoxalines
IN Schmidhalter, Beat; Schaefer, Thomas; Murer, Peter; Bardon, Kristina; Allenbach, Stephan; Ricci, Andrea
PA BASF SE, Germany
SO PCT Int. Appl., 175pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2009100991	A1	20090820	WO 2009-EP51109	20090202
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	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	EP 2008-151313	A	20080212		
OS	MARPAT 151:289317				
GI					



I



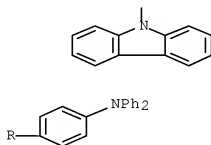
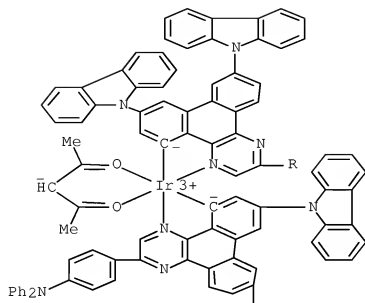
II

AB This invention relates to **electroluminescent** metal complexes I and II (R1, R2, R1' = H, (un)substituted C1-18 alkyl, C1-18 perfluoroalkyl, (un)substituted C5-12 cycloalkyl, (un)substituted C6-24 aryl, (un)substituted C2-20 heteroaryl, etc.; R1R2 = ring; R3, R3', R8, R8' = H, (un)substituted C1-18 alkyl, C1-18 perfluoroalkyl, (un)substituted C6-24 aryl, (un)substituted C2-20 heteroaryl, etc.; R4, R4', R7, R7' = H, (un)substituted C1-18 alkyl, (un)substituted C1-18 perfluoroalkyl, (un)substituted C6-24 aryl, (un)substituted C2-20 heteroaryl, etc.; R5, R5', R6, R6' = H, (un)substituted C1-18 alkyl, C1-18 perfluoroalkyl, (un)substituted C6-24 aryl, (un)substituted C2-20 heteroaryl, etc.; M = Pd, Rh, Re, Pt, Ir; L = mono- or bidentate ligand; m = 0-4; n = 1-3), a process for their preparation, electronic devices comprising the metal complexes and their use in electronic devices, especially organic light emitting diodes (OLEDs), as oxygen sensitive indicators, as phosphorescent indicators in bioassays, and as catalysts.

IT 1182726-47-1P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (preparation and **electroluminescence** of cyclometalated dibenzoquinoxaline iridium complexes)

RN 1182726-47-1 HCAPLUS

CN Iridium, bis[7,10-di-9H-carbazol-9-yl-2-[4-(diphenylamino)phenyl]dibenzo[f,h]quinoxalin-5-yl- κ C5, κ N4](2,4-pentanedionato- κ O2, κ O4)- (CA INDEX NAME)



- CC 29-13 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 9, 73
- ST cyclometalated dibenzoquinoxaline complex prepn
 electroluminescence; OLED oxygen sensitive indicator
 cyclometalated dibenzoquinoxaline iridium complex prepn;
 phosphorescent indicator bioassay cyclometalated dibenzoquinoxaline
 iridium complex prepn
- IT Metalation

- (cyclometalation; preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT Electroluminescent devices
(organic; preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT Bioassay
Electroluminescence
Fluorescent indicators
Hole transport
Phosphorescence
Semiconductor devices
(preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT 1182724-98-6P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(11; preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT 603-34-9 1484-96-4 2085-33-8, Alq3 17457-88-4 53332-49-3,
1-Phenyl-3-[p-(diethylamino)styryl]-5-[p-(diethylamino)phenyl]pyrazoline 58473-78-2 65181-78-4
68189-23-1, p-(Diethylamino)benzaldehydediphenylhydrazone
70895-80-6, Bis[4-(N,N-diethylamino)-2-methylphenyl](4-methylphenyl)methane 76185-65-4 78099-29-3 115310-63-9
123847-85-8, α -NPD 129764-80-3 146162-54-1, Balq
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(hole transport layer comprising; preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT 7782-44-7, Oxygen, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT 13716-12-6, Tri-tert-butylphosphine 657408-07-6,
2-Dicyclohexylphosphino-2',6'-dimethoxybiphenyl
RL: CAT (Catalyst use); USES (Uses)
(preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)
- IT 1034343-88-8P 1182724-29-3P 1182724-30-6P 1182724-31-7P
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1182726-86-8P	1182726-87-9P	1182726-88-0P	

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and electroluminescence of cyclometalated
dibenzoquinoxaline iridium complexes)

IT	1182726-89-1P	1182726-90-4P	1182726-91-5P	1182726-92-6P
	1182726-93-7P	1182726-94-8P	1182726-95-9P	1182726-96-0P
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	1182727-16-7P	1182727-17-8P	1182727-18-9P	1182727-19-0P
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	1182727-25-8P	1182727-26-9P	1182727-27-0P	1182727-28-1P
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	1182727-50-9P	1182727-51-0P	1182727-52-1P	1182727-53-2P
	1182727-54-3P	1182727-55-4P	1182727-56-5P	1182727-57-6P
	1182727-58-7P	1182727-59-8P	1182727-60-1P	1182727-61-2P
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	1182727-82-7P	1182727-83-8P	1182727-84-9P	1182727-85-0P
	1182727-86-1P	1182727-87-2P	1182727-88-3P	1182727-89-4P
	1182727-90-7P	1182727-91-8P	1182727-92-9P	1182727-93-0P
	1182727-94-1P	1182727-95-2P	1182727-96-3P	1182727-97-4P
	1182727-98-5P	1182727-99-6P	1182728-00-2P	1182728-02-4P
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	1182728-57-9P	1182728-59-1P	1182728-61-5P	1182728-65-9P
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1182729-41-4P	1182729-42-5P	1182729-43-6P	1182729-44-7P
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1182729-93-6P	1182729-94-7P	1182729-95-8P	

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and ~~electroluminescence~~ of cyclometalated
dibenzoquinoxaline iridium complexes)

IT	1182729-96-9P	1182729-97-0P	1182729-98-1P	1182729-99-2P
	1182730-00-2P	1182730-01-3P	1182730-02-4P	1182730-03-5P
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	1182730-28-4P	1182730-29-5P	1182730-30-8P	1182730-31-9P
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	1182730-36-4P	1182730-37-5P	1182730-38-6P	1182730-39-7P
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	1182730-56-8P	1182730-57-9P	1182730-58-0P	1182730-59-1P
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1182731-03-8P	1182731-04-9P	1182731-05-0P	
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1182731-14-1P	1182731-15-2P	1182731-16-3P	1182731-17-4P
1182731-18-5P	1182731-19-6P	1182731-20-9P	1182731-21-0P
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1182732-40-6P	1182732-41-7P		

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (preparation and **electroluminescence** of cyclometalated dibenzoquinoxaline iridium complexes)

IT	1182732-42-8P	1182732-43-9P	1182732-44-0P	1182732-45-1P
	1182732-46-2P	1182732-47-3P	1182732-48-4P	1182732-49-5P
	1182732-50-8P	1182732-51-9P	1182732-52-0P	1182732-53-1P
	1182732-54-2P	1182732-55-3P	1182732-56-4P	1182732-58-6P
	1182732-60-0P	1182732-62-2P	1182732-63-3P	1182732-64-4P
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	1182732-69-9P	1182732-70-2P	1182732-71-3P	
	1182732-72-4P	1182732-73-5P		
	1182732-74-6P	1182732-75-7P	1182732-76-8P	
	1182732-77-9P	1182732-78-0P	1182732-79-1P	1182732-80-4P
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	1182735-63-2P	1182735-64-3P	1182735-65-4P	
	1182735-66-5P			

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)

IT	78-90-0, 1,2-Diaminopropane	84-11-7, 9,10-Phenanthrene-1,2-dione
	98-80-6, Phenylboronic acid	107-15-3, 1,2-Diaminoethane, reactions
	122-39-4, Diphenylamine, reactions	694-83-7, 1,2-Diaminocyclohexane
	1118-71-4, 2,2,6,6-Tetramethyl-3,5-heptanedione	1765-93-1, 4-Fluorophenylboronic acid
	13067-81-7, 2-Ethylhexyllithium	22237-13-4, 4-Ethoxyphenylboronic acid
	73852-19-4, 3,5-Bis(trifluoromethyl)phenylboronic acid	128796-39-4, 4-(Trifluoromethyl)phenylboronic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation and electroluminescence of cyclometalated dibenzoquinoxaline iridium complexes)

IT	217-68-5P, Dibenzo[f,h]quinoxaline	1493-23-8P	2786-01-8P
	4541-70-2P	13292-05-2P	14474-59-0P, 1-Lithionaphthalene
	52866-85-0P	53348-05-3P	170800-33-6P
		194292-05-2P	
	536753-86-3P	693258-37-6P	859798-47-3P
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	1182724-18-0P	1182724-19-1P	1182724-20-4P
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	1182724-90-8P		

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2009:777366 HCAPLUS Full-text
DN 151:185140
TI Organic white light emitting material using organometallic zinc
complex of 8-hydroxyquinoline, and preparation method thereof
IN Xu, Bingshe; Wei, Fangfang; Wang, Hua; Xu, Huixia; Fang, Xiaohong;
Hao, Yuying; Chen, Liuqing
PA Taiyuan University of Technology, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 30pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	CN 101463253	A	20090624	CN 2009-10073653	200901 12
PRAI	CN 2009-10073653		20090112		
OS	CASREACT 151:185140				
GI					

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title organic white light emitting material Zn(RCz-4CN-Q)2
(bis{5-{3,6-bis[2-(3,3-dicyanomethylene-5,5-dimethyl-1-
cyclohexenyl)vinyl]-N-(6-hexyl)carbazolyl}-8-hydroxyquinoline}zinc)
is shown as I. The material uses DCDC group, 5-substituted 8-
hydroxyquinoline zinc group and carbazolyl group as red, green and
blue light-emitting groups, and has spectral bandwidth of 182.4 nm
and color coordinate (0.3177, 0.3946). The material can emit white
light and can be used in organic white light emitting diode as single
light-emitting layer. The material can improve luminous efficiency,
stabilize light color, lower starting voltage and simplify
fabrication process. Preparation method of the organic white light
emitting material is also provided.

IT 1173241-48-9P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical
or engineered material use); PREP (Preparation); USES (Uses)
(organic white light emitting material using organic zinc complex

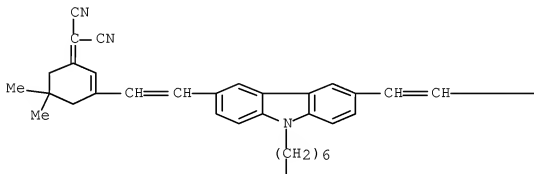
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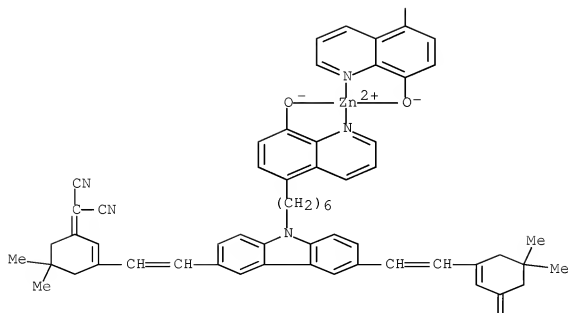
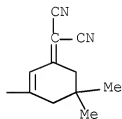
8-hydroxyquinoline, and preparation method thereof)

RN 1173241-48-9 HCAPLUS

CN Zinc, bis[[2,2'-[[9-[6-[8-(hydroxy-κO)-5-quinolinyl-κN]hexyl]-9H-carbazole-3,6-diyl]bis[2,1-ethenediyl(5,5-dimethyl-2-cyclohexen-3-yl-1-ylidene)]]bis[propanedinitrilato]](1-)]-, (SP-4-1)- (CA INDEX NAME)

PAGE 1-A







CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 27, 78

IT Luminescent substances
 (electroluminescent, organic; organic white light emitting material using organic zinc complex of 8-hydroxyquinoline, and preparation method thereof)

IT Electroluminescent devices
 Light
 (white; organic white light emitting material using organic zinc complex of 8-hydroxyquinoline, and preparation method thereof)

IT 1173241-48-9P
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (organic white light emitting material using organic zinc complex of 8-hydroxyquinoline, and preparation method thereof)

L13 ANSWER 3 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:709941 HCAPLUS Full-text

DN 151:66717

TI Iridium complex containing carbazole-substituted pyridine and phenyl derivatives as main ligand and organic light-emitting diodes containing the same

IN Chung, Kwang Choon; Cho, Hyun Nam; Lee, Jae Wook; Jin, Sung-Ho; Yoo, Ji Hoon; Kim, Jung Hwan

PA Inktec Co., Ltd., S. Korea; Dong-A University Research Foundation for Industry-Academy Cooperation

SO PCT Int. Appl., 63pp.
 CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2009072821	A2	20090611	WO 2008-KR7167	

200812
04

WO 2009072821 A3 20090723

W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

KR 2009059525 A 20090611 KR 2007-126418

200712
06

KR 905951 B1 20090706
PRAI KR 2007-126418 A 20071206
OS MARPAT 151:66717
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention relates to a novel Ir complex I [R1-8 = H, linear or branched saturated or unsatd. C1-20 alkyl with or without halo substituent(s), C3-12 cycloalkyl, or C3-12 cycloalkyl C1-20 alkyl; X1 = H, halo, cyano, linear or branched, saturated or unsatd. C1-20 alkyl, C1-20 alkoxy, tri-C1-20 alkylsilyl, tri-C5-20 arylsilyl, C3-12 cycloalkyl or C5-20 aryl and the alkyl, alkoxy, alkoxy or aryl of X1 may be further substituted by one or more H, C1-20 alkylsilyl, C5-20 arylsilyl, mono- or di-C1-20 alkylamino or amino; m = integer 1 - 4]. When the Ir complex according to the present invention is applied to an organic light-emitting diode, the heat-resistance property and the light-emitting property can be significantly improved as well as the light-emitting efficiency and the like can be significantly improved by doping the Ir complex compound into the light-emitting layer as compared to the conventional organic light-emitting diode.

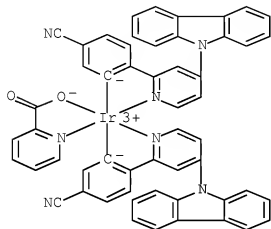
IT 1160682-13-2

RL: TEM (Technical or engineered material use); USES (Uses)
(iridium complex containing carbazole-substituted pyridine and Ph derivs. as main ligand and organic light-emitting diodes)

containing the
same)

RN 1160682-13-2 HCAPLUS

CN Iridium, bis[2-[4-(9H-carbazol-9-yl)-2-pyridinyl-κN]-5-cyanophenyl-κC] (2-pyridinecarboxylato-κN1,κO2)-(CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST iridium carbazole pyridine phenyl electrophosphorescence
electroluminescent device

IT Electroluminescent devices

(iridium complex containing carbazole-substituted pyridine and Ph
derivs. as main ligand and organic light-emitting diodes

containing the
same)

IT 1160682-08-5 1160682-09-6 1160682-10-9 1160682-11-0

1160682-12-1 1160682-13-2 1160682-14-3

RL: TEM (Technical or engineered material use); USES (Uses)

(iridium complex containing carbazole-substituted pyridine and Ph
derivs. as main ligand and organic light-emitting diodes

containing the
same)

L13 ANSWER 4 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

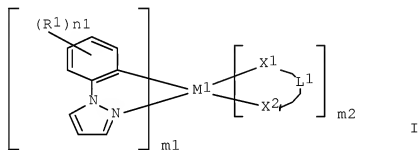
AN 2009:552593 HCAPLUS Full-text

DN 150:526739

TI Organic electroluminescent materials, organic
electroluminescent devices, display devices, and

illumination apparatus
 IN Ikemizu, Hiroshi; Nishizeki, Masato; Oshiyama, Tomohiro; Kato,
 Eisaku; Kita, Hiroshi
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 103pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2009096861	A	20090507	JP 2007-268819	20071016
PRAI	JP 2007-268819		20071016		16
OS	MARPAT 150:526739				
GI					



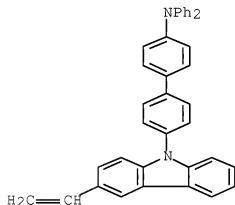
AB Organic electroluminescent materials containing metal complex I (R_1 -4, R_{11} , R_{12} = H, substitution group; n_1 , n_{12} = integer of 1-4; R_1 and/or R_2 = Q_1 ; $X_1L_1X_2$ = bidentate ligand; X_1 , X_2 = C, N, O; L_1 = groups forming bidentate ligand with X_1 and X_2 ; m_1 = 1, 2, 3; m_2 = 0, 1, 2; $m_1 + m_2$ = 2, 3; M_1 = Group 8-10 transition metals; Z_1 = 5- or 6-membered hydrocarbon ring, group necessary for forming 5-6 heterocycle; A = C, N; * is the bonding position) are claimed. Organic electroluminescent devices including the above given compds. and displays and illuminations including the devices are also claimed. Devices giving intense emission and showing long service life are obtained.

IT 1150643-37-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (light-emitting layer; j organic electroluminescent
 phenylpyrazole metal complexes in electroluminescent
 devices for display devices and illumination apparatus)

RN 1150643-37-0 HCAPLUS
 CN Iridium, [5-ethenyl-2-[1-(2,4,6-trimethylphenyl)-1H-imidazol-2-yl-
 κN3]phenyl-κC]bis[2',4',6'-trimethyl-3-(1H-pyrazol-1-yl-
 κN2)[1,1'-biphenyl]-4-yl-κC]-, polymer with
 9-[3'-(9H-carbazol-9-yl)[1,1'-biphenyl]-4-yl]-3-ethenyl-9H-carbazole
 and 4'-(3-ethenyl-9H-carbazol-9-yl)-N,N-diphenyl[1,1'-biphenyl]-4-
 amine, block (CA INDEX NAME)

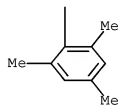
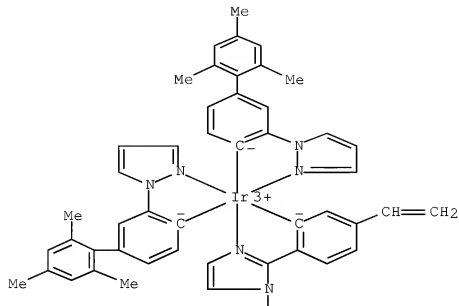
CM 1

CRN 1150643-36-9
 CMF C38 H28 N2



CM 2

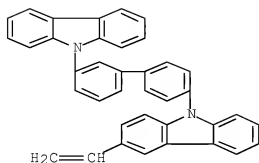
CRN 1150643-18-7
 CMF C56 H53 Ir N6
 CCI CCS



CM 3

CRN 1133240-96-6

CMF C38 H26 N2



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
- ST org **electroluminescent** device illumination app;
phenylpyrazole iridium complex **electroluminescent**
material; display or **electroluminescent** metal complex
- IT Illumination
(apparatus; organic **electroluminescent** phenylpyrazole metal
complexes in **electroluminescent** devices for display
devices and illumination apparatus)
- IT Luminescent substances
(**electroluminescent**; organic **electroluminescent**
phenylpyrazole metal complexes in **electroluminescent**
devices for display devices and illumination apparatus)
- IT **Electroluminescent** devices
(organic **electroluminescent** phenylpyrazole metal complexes
in **electroluminescent** devices for display devices and
illumination apparatus)
- IT Coordination compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(organic **electroluminescent** phenylpyrazole metal complexes
in **electroluminescent** devices for display devices and
illumination apparatus)
- IT 1150643-09-6P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
PREP (Preparation); USES (Uses)
(dopant in light-emitting layer; organic **electroluminescent**
phenylpyrazole metal complexes in **electroluminescent**
devices for display devices and illumination apparatus)
- IT 1140513-94-5 1150642-95-7 1150642-96-8 1150642-97-9
1150642-98-0 1150642-99-1 1150643-00-7 1150643-01-8
1150643-02-9 1150643-03-0 1150643-04-1 1150643-05-2
1150643-06-3 1150643-07-4 1150643-08-5 1150643-10-9

1150643-11-0 1150643-12-1 1150643-13-2
 RL: MOA (Modifier or additive use); USES (Uses)
 (dopant in light-emitting layer; organic electroluminescent
 phenylpyrazole metal complexes in electroluminescent
 devices for display devices and illumination apparatus)

IT 550378-78-4 848724-46-9 1149832-11-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (host in light-emitting layer; organic electroluminescent
 phenylpyrazole metal complexes in electroluminescent
 devices for display devices and illumination apparatus)

IT 1150643-37-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (light-emitting layer; j organic electroluminescent
 phenylpyrazole metal complexes in electroluminescent
 devices for display devices and illumination apparatus)

IT 1150643-15-4 1150643-17-6 1150643-19-8 1150643-21-2
 1150643-22-3 1150643-24-5 1150643-26-7 1150643-28-9
 1150643-30-3 1150643-32-5 1150643-35-8 1150643-39-2
 1150643-41-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (light-emitting layer; organic electroluminescent
 phenylpyrazole metal complexes in electroluminescent
 devices for display devices and illumination apparatus)

IT 1150643-42-7P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (organic electroluminescent phenylpyrazole metal complexes
 in electroluminescent devices for display devices and
 illumination apparatus)

IT 10025-83-9, Iridium trichloride 1093072-00-4 1149832-13-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (organic electroluminescent phenylpyrazole metal complexes
 in electroluminescent devices for display devices and
 illumination apparatus)

L13 ANSWER 5 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:335468 HCAPLUS Full-text

DN 150:362327

TI Phosphorescent polymer compound and organic
 electroluminescent device using the same

IN Takahashi, Yoshiaki

PA Showa Denko K.K., Japan

SO PCT Int. Appl., 54pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2009034987	A1	20090319	WO 2008-JP66303	20080910
<p>W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW</p> <p>RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM</p>				
PRAI JP 2007-239792	A	20070914		
GI				



AB Disclosed is a phosphorescent polymer compound having high luminous efficiency and long emission life. Also disclosed is an organic electroluminescent device using such a phosphorescent polymer compound. Specifically disclosed is a phosphorescent polymer compound containing a structural unit represented by [L1:]Ir[:L2]2 [L1 and L2 = specific ligands that are selected as to satisfy a specific condition].

IT 1133721-36-4
 RL: TEM (Technical or engineered material use); USES (Uses) (phosphorescent polymer compound for organic electroluminescent device)

RN 1133721-36-4 HCAPLUS

CN Iridium, bis[5-(1,1-dimethylethyl)-2-(2-pyridinyl-κN)phenyl-κC][5-[2-(4-ethenylphenyl)ethyl]-2-(3-isquinolinyl-κN)phenyl-κC]-, polymer with N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-

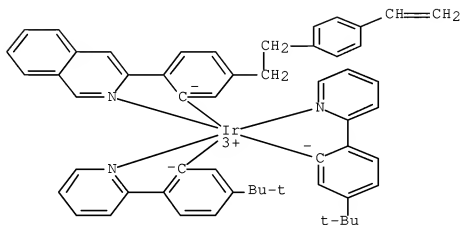
yl)benzenamine and bis(3,5-dimethyl[1,1'-biphenyl]-4-yl)(4'-ethenyl-3,5-dimethyl[1,1'-biphenyl]-4-yl)borane (CA INDEX NAME)

CM 1

CRN 1133721-29-5

CMF C55 H52 Ir N3

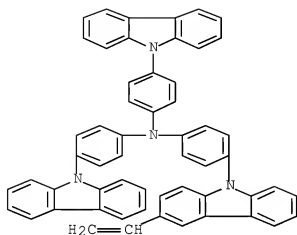
CCI CCS



CM 2

CRN 934399-25-4

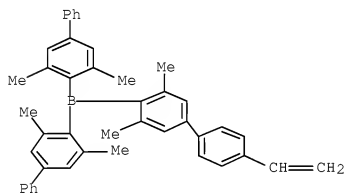
CMF C56 H38 N4



CM 3

CRN 856695-28-8

CMF C44 H41 B



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74, 78
 ST phosphorescent polymer org **electroluminescent** device
 IT **Electroluminescent** devices
 (displays; phosphorescent polymer compound for organic **electroluminescent** device)

IT Luminescent screens
(electroluminescent; phosphorescent polymer compound for organic electroluminescent device)

IT Electroluminescent devices
Phosphorescent substances
(phosphorescent polymer compound for organic electroluminescent device)

IT Coordination compounds
Organometallic compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphorescent polymer compound for organic electroluminescent device)

IT 98-80-6, Phenyl boronic acid 217-65-2, Dibenzo[f,h]quinoline 358-23-6, Triflic anhydride 612-62-4, 2-Chloroquinoline 2156-04-9, 4-Vinylphenyl boronic acid 4926-28-7, 2-Bromo-4-picoline 7651-81-2, 3-Hydroxyisoquinoline 13569-57-8, Iridium trichloride trihydrate 19493-44-8, 1-Chloroisoquinoline 63056-20-2 87532-75-0 126747-14-6, 4-Cyanophenyl boronic acid 855285-41-5, Benzo[h]quinoline-4-carboxaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorescent polymer compound for organic electroluminescent device)

IT 3475-21-6P 40174-37-6P 185950-63-4P 435294-70-5P
632327-36-7P 740845-95-8P 852609-81-5P 872984-48-0P
917114-09-1P 917114-10-4P 917114-14-8P 918890-26-3P
1132943-23-7P 1132943-28-2P 1132943-31-7P 1132943-34-0P
1132943-37-3P 1132943-42-0P 1133721-24-0P 1133721-25-1P
1133721-26-2P 1133721-27-3P 1133721-28-4P 1133721-29-5P
1133721-30-8P 1133721-31-9P 1133721-32-0P 1133721-33-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(phosphorescent polymer compound for organic electroluminescent device)

IT 1132943-18-0P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(phosphorescent polymer compound for organic electroluminescent device)

IT 1133721-34-2 1133721-35-3 1133721-36-4 1133721-38-6
1133721-39-7
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphorescent polymer compound for organic electroluminescent device)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 6 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:292025 HCAPLUS Full-text
 DN 150:317269
 TI ~~Electroluminescent~~ materials grafted with charge transport
 moieties having graded ionization potential or electrophilic
 property and their application in light-emitting diodes
 IN Chen, Show-An; Huang, Chih-Wei; Peng, Kang-Yung; Liu, Ching-Yang
 PA National Tsing Hua University, Taiwan
 SO U.S. Pat. Appl. Publ., 26pp.
 CODEN: USXXCO

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	US 20090066238	A1	20090312	US 2008-230725	200809 04

PRAI TW 2007-96133232 A 20070906

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB This invention provides new ~~electroluminescent~~ materials such as a
 conjugated polymer or a phosphorescent organometallic complex, which
 are grafted with multiple charge transport moieties with graded
 ionization potential or electrophilic property. The charge transport
 moieties can be all hole transport moieties or all electron transport
 moieties. The emissive ~~electroluminescent~~ materials covering the
 full visible range can be prepared Organic light emitting diodes
 prepared with these materials can be used as indicators, light source
 and display for cellular phones, digital camera, pager, portable
 computer, personal data acquisition (PDA), watch, hand-held
 videogame, and billboard, etc.

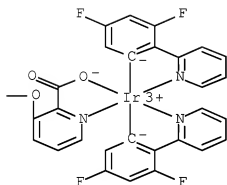
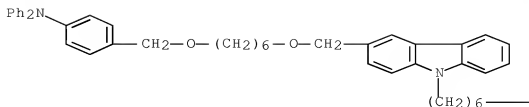
IT 1130298-64-4P

RL: SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)

(~~electroluminescent~~ materials grafted with charge
 transport moieties having graded ionization potential or
 electrophilic property and their application in light-emitting
 diodes)

RN 1130298-64-4 HCAPLUS

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl- κ N)phenyl- κ C][3-
 [[6-[3-[[6-[[4-(diphenylamino)phenyl]methoxy]hexyl]oxy]methyl]-9H-
 carbazol-9-yl]hexyl]oxy]-2-pyridinecarboxylato- κ N1, κ O2]-
 (CA INDEX NAME)



INCL 313504000; 525474000; 525540000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST ~~electroluminescent~~ device ionization potential charge transport polymer

IT ~~Electroluminescent~~ devices

Electron transport

Electrophilicity

Hole transport

Ionization potential

(~~electroluminescent~~ materials grafted with charge transport moieties having graded ionization potential or electrophilic property and their application in light-emitting diodes)

IT Luminescent substances

(~~electroluminescent; electroluminescent~~ materials grafted with charge transport moieties having graded ionization potential or electrophilic property and their application in light-emitting diodes)

IT 629-03-8, 1,6-Dibromohexane 4041-19-4 14348-75-5,
 2,7-Dibromofluorenone 18908-66-2, 1-Bromo-2-ethylhexane
 86658-71-1 108962-32-9, 4,4'-Dibutyltriphenylamine 376367-93-0
 481695-70-9 780039-40-9 1128102-39-5 1128102-42-0
 1128102-45-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (electroluminescent materials grafted with charge
 transport moieties having graded ionization potential or
 electrophilic property and their application in light-emitting
 diodes)

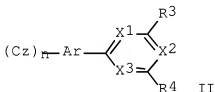
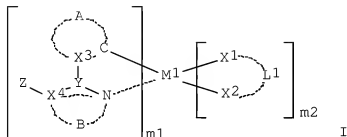
IT 607708-19-0P 947369-29-1P 1088428-71-0P 1088428-78-7P
 1088428-85-6P 1128102-40-8P 1128102-41-9P 1128102-43-1P
 1128102-44-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (electroluminescent materials grafted with charge
 transport moieties having graded ionization potential or
 electrophilic property and their application in light-emitting
 diodes)

IT 1088428-83-4P 1130298-64-4P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (electroluminescent materials grafted with charge
 transport moieties having graded ionization potential or
 electrophilic property and their application in light-emitting
 diodes)

L13 ANSWER 7 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2009:114549 HCAPLUS Full-text
 DN 150:179594
 TI Organic electroluminescence (EL) devices with high
 luminous efficiency and suppressed dark spot, and display devices
 and lamps having them
 IN Yasukawa, Noriko; Kato, Eisaku
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 105pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2009021336	A	20090129	JP 2007-182063	200707 11
PRAI	JP 2007-182063		20070711		

OS MARPAT 150:179594
GI



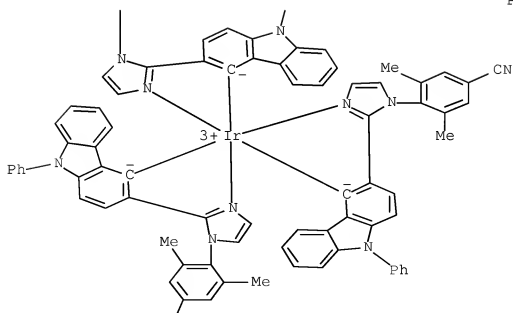
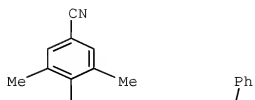
AB The EL devices include anodes, luminescent layers containing host compds. and metal complexes, electron transport layers, and cathodes, wherein the luminescent layers contain metal complexes of I (X4 = N, C; Z = hydrocarbon ring, heterocyclic ring; X3, Y = C, N; A = atomic groups forming 5 to 6-membered hydrocarbon or heterocyclic ring with X3C; B = CR1:CR2, N:CR2, CR1:N, N:N; R1, R2 = H, substituent; X1L1X2 = bidentate ligand; X1, X2 = C, N, O; L1 = atomic group forming bidentate ligand with X1 and X2; m1 = 1, 2, 3; m2 = 0, 1, 2; m1 + m2 = 2, 3; M1 = Group VIII metal), and the electron transport layers contain II [n = 1, 2; Ar = arylene, heteroarylene; R3, R4 = H, aryl; X1-3 = :CR, :N; at least one of X1-3 is :N; R = H, substituent; Cz = (un)substituted carbazolyl]. The devices can prevent crystallization of organic layers.

IT 1101860-64-3

RL: TEM (Technical or engineered material use); USES (Uses)
(dopant, luminescent layer; organic EL devices with high luminous efficiency and suppressed dark spot for display devices and lamps)

RN 1101860-64-3 HCAPLUS

CN Iridium, tris[3-[1-(4-cyano-2,6-dimethylphenyl)-1H-imidazol-2-yl-
κN3]-9-phenyl-9H-carbazol-4-yl-κC]- (CA INDEX NAME)



NC

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST Section cross-reference(s): 74, 76
org ~~electroluminescent~~ device dark spot prevention
display; cyclohexylimidazolylbisphenylpyrazolylphenyliridium
diphenylpyridinylphenylcarbazole dicarbazolylbenzene
~~electroluminescent~~ lamp luminous efficiency

IT ~~Electroluminescent~~ devices
(displays; organic EL devices with high luminous efficiency and
suppressed dark spot for display devices and lamps)

IT Luminescent screens
(~~electroluminescent~~; organic EL devices with high luminous
efficiency and suppressed dark spot for display devices and
lamps)

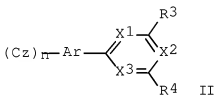
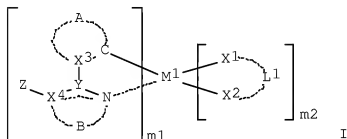
IT 405289-74-9 800395-01-1 832109-92-9 1013021-35-6
1013022-35-9 1085273-76-2 1100761-20-3 1100761-21-4
1100761-22-5 1100761-23-6 1100761-24-7 1100761-25-8
1100761-26-9 1100761-27-0 1100763-91-4 1101860-53-0
1101860-54-1 1101860-55-2 1101860-56-3 1101860-57-4
1101860-58-5 1101860-59-6 1101860-60-9 1101860-61-0
1101860-62-1 1101860-63-2 ~~1101860-64-3~~ 1101860-69-8
1101860-70-1 1101860-71-2 1101860-72-3 1101860-73-4
1101860-74-5

RL: TEM (Technical or engineered material use); USES (Uses)
(dopant, luminescent layer; organic EL devices with high luminous
efficiency and suppressed dark spot for display devices and
lamps)

L13 ANSWER 8 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2009:114548 HCAPLUS Full-text
DN 150:179593
TI Organic ~~electroluminescent~~ (EL) devices with high luminous
efficiency and suppressed dark spot, and display devices and lamps
having them
IN Yasukawa, Noriko; Kato, Eisaku

PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 98pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2009021335	A	20090129	JP 2007-182062	20070711
PRAI	JP 2007-182062		20070711		
OS	MARPAT 150:179593				
GI					



AB The EL devices include anodes, luminescent layers containing host compds. and metal complexes, and cathodes, wherein the luminescent layers contain metal complexes of I (X4 = N, C; Z = hydrocarbon ring, heterocyclic ring; X3, Y = C, N; A = atomic groups forming 5 to 6-membered hydrocarbon or heterocyclic ring with X3C; B = CR1:CR2, N:CR2, CR1:N, N:N; R1, R2 = H, substituent; X1L1X2 = bidentate ligand; X1, X2 = C, N, O; L1 = atomic group forming bidentate ligand with X1 and X2; m1 = 1, 2, 3; m2 = 0, 1, 2; m1 + m2 = 2, 3; M1 =

Group VIII metal) and Ar₄Ar₅N(p-C₆H₄-xRxx)mAr₂NAr₁Ar₃(p-C₆H₄-yRyy)nNAr₆Ar₇ (Ar₁ = aryl; Ar₂, Ar₃ = arylene; Ar₄-7 = aryl; Rx, Ry = substituent; x, y = 0-4; m, n = 0-3; Ar₂ and Ar₃, Ar₄ and Ar₅, and/or Ar₆ and Ar₇ are connected through direct bonding, O, S, or alkylene). The metal complexes (dopants) and host compds. will not interact with each other, thus cause no crystallization in organic layers.

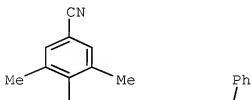
IT 1101860-64-3

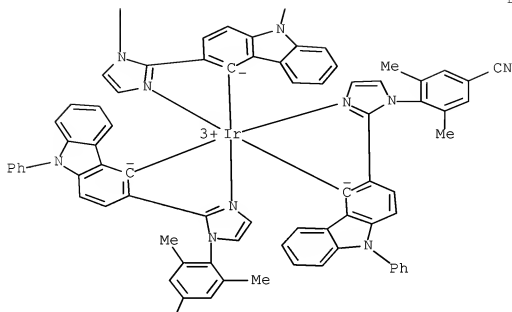
RL: TEM (Technical or engineered material use); USES (Uses)
(dopant; organic EL devices with high luminous efficiency and suppressed dark spot for displays and lamps)

RN 1101860-64-3 HCAPLUS

CN Iridium, tris[3-[1-(4-cyano-2,6-dimethylphenyl)-1H-imidazol-2-yl-κN3]-9-phenyl-9H-carbazol-4-yl-κC]- (CA INDEX NAME)

PAGE 1-A





NC

- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- Section cross-reference(s): 74, 76
- ST org electroluminescent device dark spot prevention display; cyclohexylimidazolylbisphenylpyrazolylphenyliridium bisxanthenylphenylphenylamine electroluminescent device luminous efficiency lamp
- IT Electroluminescent devices
(displays; organic EL devices with high luminous efficiency and suppressed dark spot for displays and lamps)
- IT Luminescent screens
(electroluminescent; organic EL devices with high luminous efficiency and suppressed dark spot for displays and lamps)
- IT 343978-78-9 405289-74-9 800395-01-1 832109-92-9 1013021-35-6

1100761-20-3 1100761-21-4 1100761-22-5 1100761-23-6
 1100761-24-7 1100761-25-8 1100761-26-9 1100761-27-0
 1100763-91-4 1101860-55-2 1101860-58-5 1101860-59-6
 1101860-61-0 ~~1101860-64-3~~ 1101860-71-2 1101860-72-3
 1101860-73-4 1101860-74-5

RL: TEM (Technical or engineered material use); USES (Uses)
 (dopant; organic EL devices with high luminous efficiency and
 suppressed dark spot for displays and lamps)

L13 ANSWER 9 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:86345 HCAPLUS Full-text

DN 150:155890

TI Organic electroluminescence device showing improved light
 efficiency, luminescence lifetime, uniform brightness, and
 suppressed dark spot formation, and its use in display and
 illumination apparatus

IN Yasukawa, Noriko; Kato, Eisaku

PA Konica Minolta Holdings, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 112pp.

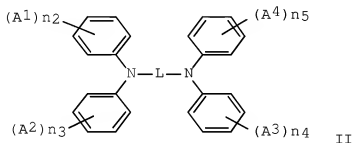
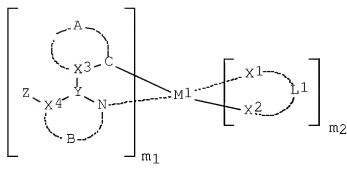
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2009016719	A	20090122	JP 2007-179521	200707 09
PRAI	JP 2007-179521		20070709		
OS	MARPAT 150:155890				
GI					



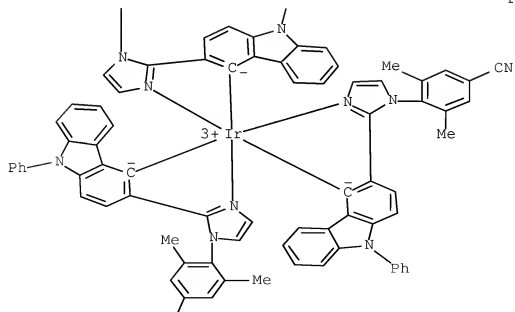
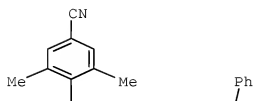
AB The title organic electroluminescence device contains a metal complex compound represented by I [X1, X2 = C, N, O; X3 = C, N; X3, X4, Y = C, N; Z = hydrocarbon ring, heterocycle ring; A = atom group for forming 5- to 6-member hydrocarbon or heterocycle ring; B = -C(R01):C(R02)-, -N:C(R02)-, -C(R01):N-, -N:N-; R01, R02 = H, substituent; L1 = atom group for forming ligand; m1 = 1, 2, 3; m2 = 0, 1, 2; m1+m2 = 2 or 3; M1 = group 8 to 10 metal] in an electroluminescence layer and a compound represented by II [A1-4 = substituent; L = -Ar5-(-L2-Ar6-)n1-; Ar5, Ar6 = arylene; L2 = single bond, connection group; n1 = 0, 1; n2, n3, n4, n5 = 0-5] in a pos. hole transport layer.

IT 1101860-64-3

RL: MOA (Modifier or additive use); USES (Uses)
 (electroluminescence dopant material; organic electroluminescence device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

RN 1101860-64-3 HCAPLUS

CN Iridium, tris[3-(1-(4-cyano-2,6-dimethylphenyl)-1H-imidazol-2-yl)-κN3]-9-phenyl-9H-carbazol-4-yl-κC] (CA INDEX NAME)



NC

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74, 76

ST org ~~electroluminescence~~ device display illumination metal complex dopant

IT Luminescent substances
 (~~electroluminescent~~; organic ~~electroluminescence~~ device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

IT ~~Electroluminescent~~ devices
 Optical imaging devices
 (organic ~~electroluminescence~~ device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

IT 405289-74-9 800395-01-1 832109-92-9 1013021-35-6
 1013022-35-9 1085273-76-2 1100761-20-3 1100761-21-4
 1100761-22-5 1100761-23-6 1100761-24-7 1100761-25-8
 1100761-26-9 1100761-27-0 1100763-91-4 1101860-53-0
 1101860-54-1 1101860-55-2 1101860-56-3 1101860-57-4
 1101860-58-5 1101860-59-6 1101860-60-9 1101860-61-0
 1101860-62-1 1101860-63-2 ~~1101860-64-3~~ 1101860-66-5
 1101860-68-7 1101860-69-8 1101860-70-1 1101860-71-2
 1101860-72-3 1101860-73-4 1101860-74-5
 RL: MOA (Modifier or additive use); USES (Uses)
 (~~electroluminescence~~ dopant material; organic ~~electroluminescence~~ device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

IT 58328-31-7 550378-78-4 604785-54-8 697312-14-4 872216-44-9
 RL: TEM (Technical or engineered material use); USES (Uses)
 (~~electroluminescence~~ host material; organic

electroluminescence device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

IT 141546-10-3 164724-33-8 164724-35-0 169224-61-7 209980-53-0
 266361-70-0 1101171-58-7 1101171-59-8 1101171-60-1
 1101171-61-2 1101171-62-3 1101171-63-4 1101171-64-5
 1101171-65-6 1101171-66-7 1101171-67-8 1101171-68-9
 1101171-69-0 1101171-70-3

RL: TEM (Technical or engineered material use); USES (Uses)
 (pos. hole transport material; organic electroluminescence device showing improved light efficiency, luminescence lifetime, uniform brightness, and suppressed dark spot formation, and its use in display and illumination apparatus)

L13 ANSWER 10 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:83345 HCAPLUS Full-text

DN 150:169801

TI Triazine ring-containing polymer compounds for organic light-emitting devices with high luminescent efficiency and brightness

IN Toba, Masahiko

PA Showa Denko K.K., Japan

SO PCT Int. Appl., 47pp.

CODEN: PIXXD2

DT Patent

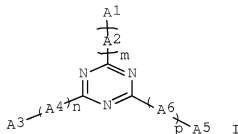
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2009011270	A1	20090122	WO 2008-JP62445	20080710
W:	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI JP 2007-184403
GI

A 20070713



AB The present invention relates to polymer compds. containing a structural unit derived from a compound I, wherein A1, A3, A5 = independently optionally heteroatom-containing monovalent aromatic group; A2, A4, A6 = independently optionally heteroatom-containing divalent aromatic group (≥ 1 of A1-6 has a substituent containing a polymerizable functional group); m = 1-2 integer; n = 0-2 integer; and p = 0-2 integer. Thus, 10 mmol 4-bromobenzyl chloride and 30 mmol 4-tert-butylbenzonitrile were reacted followed by reaction with vinylphenylborone to give a vinyl-containing triazine derivative, 20 mg of which was radically-polymerized, 40.5 mg of the resulting polymer was mixed with 9 mg a phosphorescent compound and 40.5 mg N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-yl)-benzenamine in 2910 mg toluene, applied on a Baytron P/ITO/glass substrate and dried, a mixture layer of barium and aluminum was formed thereon to give a test piece, showing maximum quantum efficiency 9.1%, maximum brightness 58,000 cd/m², and brightness half life 5200 h.

IT 1104454-86-5P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of triazine ring-containing polymer compds. for organic light-emitting devices with high luminescent efficiency and brightness)

RN 1104454-86-5 HCAPLUS

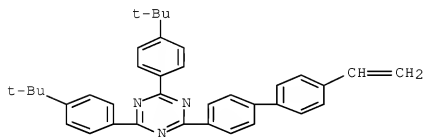
CN Iridium, bis[5-(1,1-dimethylethyl)-2-(2-pyridinyl-κN)phenyl-κC][5-ethenyl-2-(2-pyridinyl-κN)phenyl-κC]-,

polymer with N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-yl)benzenamine and
 2,4-bis[4-(1,1-dimethylethyl)phenyl]-6-(4'-ethenyl[1,1'-biphenyl]-4-yl)-1,3,5-triazine (CA INDEX NAME)

CM 1

CRN 1103883-38-0

CMF C37 H37 N3

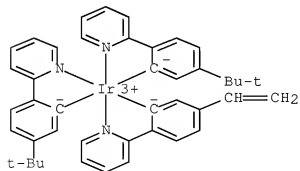


CM 2

CRN 942151-01-1

CMF C43 H42 Ir N3

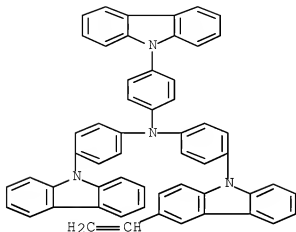
CCI CCS



CM 3

CRN 934399-25-4

CMF C56 H38 N4



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 73, 74

IT Electroluminescent devices

(preparation of triazine ring-containing polymer compds. for

organic

light-emitting devices with high luminescent efficiency and brightness)

IT 1103883-56-2P 1103883-57-3P 1103883-60-8P 1103883-63-1P

1103883-67-5P 1103883-69-7P 1103883-72-2P 1103883-73-3P

1103883-76-6P 1104454-85-4P **1104454-86-5P**

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP

(Properties); TEM (Technical or engineered material use); PREP

(Preparation); USES (Uses)

(preparation of triazine ring-containing polymer compds. for

organic

light-emitting devices with high luminescent efficiency and brightness)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

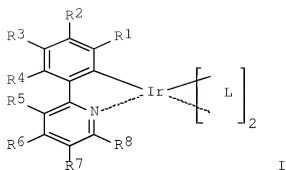
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 11 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:3223 HCAPLUS Full-text

DN 150:109407
 TI Phosphorescent polymer compounds and organic
~~electroluminescent~~ devices manufactured therewith
 IN Takahashi, Yoshiaki
 PA Showa Denko K.K., Japan
 SO PCT Int. Appl., 68pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2009001953	A1	20081231	WO 2008-JP61800	200806 24
	W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	JP 2009030038	A	20090212	JP 2008-168486	200806 27
PRAI	JP 2007-170646	A	20070628		
GI					



AB A phosphorescent polymer compound has high luminance efficiency and long life. An organic **electroluminescent** device includes the compound. The phosphorescent polymer compound includes structural units that are derived from a compound I [R1-8 = H, halo, cyano, alkyl, aryl, heteroaryl, or amino optionally substituted with alkyl, alkoxy, silyl optionally substituted with alkyl, or a group having a radically polymerizable functional group, and one of R1-8 is a group having a radically polymerizable functional group; L = ligand with a specific five-membered ring structure, and the two ligands L may be the same or different from each other].

IT 1094700-97-6F

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(phosphorescent polymer compds. and organic
electroluminescent devices manufactured therewith)

RN 1094700-97-6 HCAPLUS

CN Iridium, [4-[(4-ethenylphenyl)methoxy]-2-(2-pyridinyl-
κN)phenyl-κC]bis[5-methyl-2-(1H-1,2,4-triazol-1-yl-
κN2)phenyl-κC]-, polymer with
N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-
yl)benzenamine and bis(3,5-dimethyl[1,1'-biphenyl]-4-yl)(4'-ethenyl-
3,5-dimethyl[1,1'-biphenyl]-4-yl)borane (CA INDEX NAME)

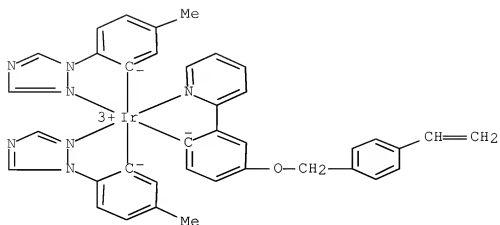
CM 1

CRN 1094700-78-3

CMF C38 H32 Ir N7 O

CCI CCS

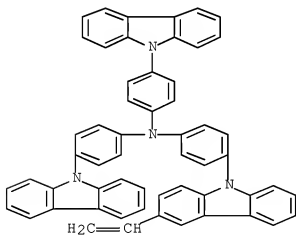
10/598,971



CM 2

CRN 934399-25-4

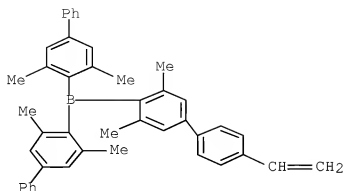
CMF C56 H38 N4



CM 3

CRN 856695-28-8

CMF C44 H41 B



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
- ST phosphorescent polymer org electroluminescent device
iridium phenylpyridine
- IT **Electroluminescent devices**
(phosphorescent polymer compds. and organic
electroluminescent devices manufactured therewith)
- IT 109-04-6, 2-Bromopyridine 288-13-1, Pyrazole 288-88-0,
1H-1,2,4-Triazole 589-87-7, 4-Bromoiodobenzene 624-31-7,
4-Iodotoluene 1592-20-7, 4-Vinylbenzyl chloride 3475-07-8
6336-45-4, Vinylboronic acid dibutyl ester 10025-83-9, Iridium
trichloride 23100-12-1, 2-Chloro-5-formylpyridine 35779-04-5,
4-tert-Butyliodobenzene 69135-05-3 87199-18-6,
3-Hydroxyphenylboronic acid 123324-71-0, 4-tert-Butylphenylboronic
acid 740845-95-8 872872-74-7 1094356-77-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorescent polymer compds. and organic
electroluminescent devices manufactured therewith)
- IT 2244-88-4P 13788-92-6P 98061-22-4P 343604-39-7P 832109-91-8P
942151-01-1P 1094356-69-0P 1094356-84-9P 1094356-87-2P
1094356-97-4P 1094700-72-7P 1094700-74-9P 1094700-76-1P
1094700-78-3P 1094700-80-7P 1094700-82-9P 1094700-85-2P
1094700-88-5P 1094700-91-0P 1094700-93-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(phosphorescent polymer compds. and organic
electroluminescent devices manufactured therewith)
- IT 1094700-95-4P **1094700-97-6P** **1094700-99-8P**
1094701-01-5P 1094701-03-7P 1094701-05-9P

1094701-07-1P 1094701-09-3P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (phosphorescent polymer compds. and organic electroluminescent devices manufactured therewith)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 12 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2008:567177 HCAPLUS Full-text

DN 149:32816

TI The Synthesis and Properties of Carbazole-Phenylazomethine Double Layer-Type Dendrimers

AU Albrecht, Ken; Kasai, Yuto; Kimoto, Atsushi; Yamamoto, Kimihisa

CS Department of Chemistry, Faculty of Science and Technology, Keio University, Yokohama, 223-8522, Japan

SO Macromolecules (Washington, DC, United States) (2008), 41(11), 3793-3800

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB A new double layer-type dendrimer with carbazole as the outer layer and phenylazomethine as the inner layer of the dendron was synthesized using the Ullmann reaction and dehydration reaction in the presence of titanium tetrachloride. In this dendrimer, the carbazole units act as excellent hole-transporters, the phenylazomethine units act as metal assembling sites, and the combination of both units provides a thermally stable shell for which the 10% weight loss temperature was over 550 °C. The dendrimers were used as the hole-transporting layer in an OLED device. The OLED device performance increased when the generation of the carbazole increased, corresponding to the higher HOMO level. Addnl., the enhancement of the hole-transporting property was observed by simple complexation of the metal ions to the imine site. Next, the effect of the generation of phenylazomethine was observed and compared to the asym.-type carbazole-phenylazomethine dendrimers. When the generation of phenylazomethine increased in the asym.-type dendrimer, the device performance decreased. In contrast, the performance did not change using the double layer-type dendrimer. This indicates that the outer layer carbazole works as a hole-transporting shell, and the double layer-type architecture is an ideal structure.

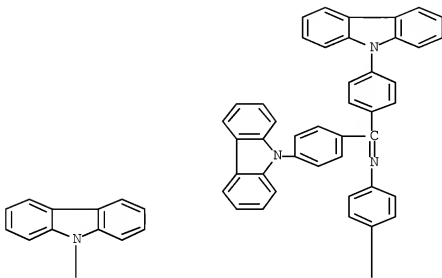
IT 1030836-93-1P

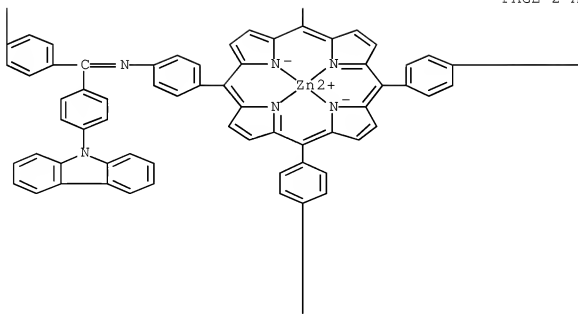
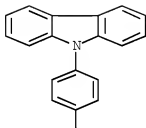
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(the synthesis and properties of carbazole-phenylazomethine double layer-type dendrimers)

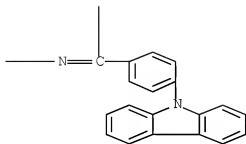
RN 1030836-93-1 HCAPLUS
 CN Zinc, [[4,4',4'',4'''-(21H,23H-porphine-5,10,15,20-tetrayl-
 κN21,κN22,κN23,κN24)tetrakis[N-[bis[4-(9H-
 carbazol-9-yl)phenyl]methylene]benzenaminato]](2-)]-, (SP-4-1)- (CA
 INDEX NAME)

PAGE 1-A

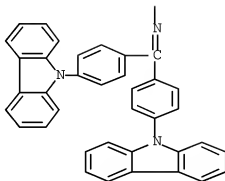




PAGE 2-B



PAGE 3-A



- CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 73, 76
- IT **Electroluminescent devices**
 HOMO (molecular orbital)
 Hole transport
 Luminescence
 Thermal stability
 Ullmann reaction
 Voltammetry
 (the synthesis and properties of carbazole-phenylazomethine
 double layer-type dendrimers)
- IT 748157-32-6P 1030630-74-0P **1030836-93-1P**
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)

(the synthesis and properties of carbazole-phenylazomethine double layer-type dendrimers)

OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

RE.CNT 84 THERE ARE 84 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 13 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2008:525964 HCAPLUS Full-text

DN 148:517837

TI Organometallic complex and organic electroluminescent device using the same

IN Ragini, Das Rupasree; Kim, Hee-Kyung; Kwon, O-Hyun; Byun, Young-Hun; Park, Joon-Yong; Song, Jung-Bae; Han, Eun-Sil

PA Samsung Electronics Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 30pp.

CODEN: USXXCO

DT Patent

LA English

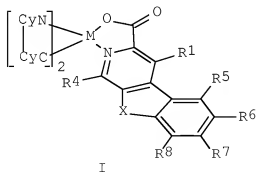
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	
PI	US 20080103308	A1	20080501	US 2007-932121	20071031
	KR 2008039056	A	20080507	KR 2006-106725	20061031
PRAI	KR 2006-106725	A	20061031		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS CASREACT 148:517837; MARPAT 148:517837

GI



AB Provided are a highly efficient phosphorescent organometallic complex I ($M = \text{Ir, Os, Pt, Pb, Re, Ru, Pd}$; $\text{CyN} = (\text{un})\text{substituted C3-60}$ heterocyclic group comprising N bound to M, etc.; $\text{CyC} = (\text{un})\text{substituted C4-60 carbocyclic group comprising carbon bound to M, etc.}$; $\text{CyN-CyC} = \text{cyclometalating ligand bound to M via N and C, etc.}$; $X = \text{organoamino, organosilyl, O, S, etc.}$; $R1, R4, R5, R6, R7, R8 = \text{H, OH, sulfo, halo, carboxy, amino, nitro, cyano, (un)substituted C1-20 alkyl, alkoxy, alkenyl, alkynyl, heteroalkyl, etc.}$) and an organic electroluminescent (EL) device using the same. The organometallic complex can be used in the formation of an organic layer of the organic EL device, and can emit light in a red wavelength range as a highly efficient phosphorescent material. The organic EL device using the organometallic complex can exhibit high brightness and a low driving voltage.

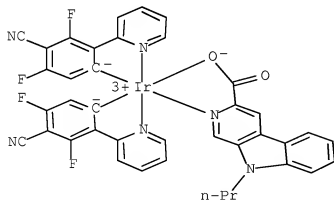
IT 1021947-47-6P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of cyclometalated nitrogen heterocyclic organometallic complex and organic electroluminescent device using the same)

RN 1021947-47-6 HCAPLUS

CN Iridium, bis[4-cyano-3,5-difluoro-2-(2-pyridinyl- κN)phenyl- κC](9-propyl-9H-pyrido[3,4-b]indole-3-carboxylato- $\kappa\text{N2}, \kappa\text{O3}$)- (CA INDEX NAME)



INCL 546005000; 313504000

CC 29-13 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 73

ST cyclometalated iridium organometallic complex prepn org
 electroluminescent device

IT Metalation
 (cyclometalation; preparation of cyclometalated nitrogen
 heterocyclic
 organometallic complex and organic electroluminescent
 device using the same)

IT Electroluminescent devices
 (organic; preparation of cyclometalated nitrogen heterocyclic
 organometallic complex and organic electroluminescent
 device using the same)

IT Brightening
 Phosphorescent substances
 (preparation of cyclometalated nitrogen heterocyclic
 organometallic
 complex and organic electroluminescent device using the
 same)

IT Organometallic compounds
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)
 (preparation of cyclometalated nitrogen heterocyclic
 organometallic
 complex and organic electroluminescent device using the
 same)

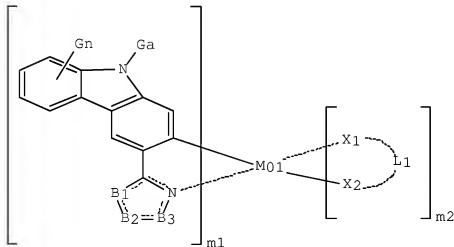
IT 1021947-48-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (=preparation of cyclometalated nitrogen heterocyclic
 organometallic
 complex and organic electroluminescent device using the
 same)

IT 944832-51-3P 1021947-42-1P 1021947-43-2P 1021947-44-3P
 1021947-45-4P 1021947-46-5P 1021947-47-6P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)
 (preparation of cyclometalated nitrogen heterocyclic
 organometallic
 complex and organic electroluminescent device using the
 same)

IT 391611-77-1 435294-69-2 603109-48-4 664374-05-4 795280-15-8
 1021947-49-8 1021947-50-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cyclometalated nitrogen heterocyclic
 organometallic
 complex and organic electroluminescent device using the
 same)

L13 ANSWER 14 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2008:415748 HCAPLUS Full-text
 DN 148:437017
 TI Organic electroluminescent material, organic
 electroluminescent device, display, and lighting system
 IN Oshiyama, Tomohiro; Nishizeki, Masato; Kita, Hiroshi
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 52pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2008074940	A	20080403	JP 2006-255133	20060921
PRAI	JP 2006-255133		20060921		
OS	MARPAT 148:437017				
GI					



I

AB The invention refers to an organic electroluminescent material comprising I [X1,2 = O, S, -NR01; R01 = alkyl, aromatic hydrocarbon or heterocycle; B1-3 = C or N wherein at least one is N; L1 = atoms forming a bidentate ligand with X1,2; G = substituent; Gallium arsenide = electron withdrawing substituent; n = 0 - 4, m1, m2 = 0 - 3, wherein $1 \leq m1 + m2 \leq 3$; M01 = group 8 - 10 metal].

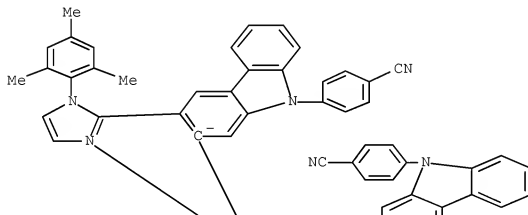
IT 1017863-84-1

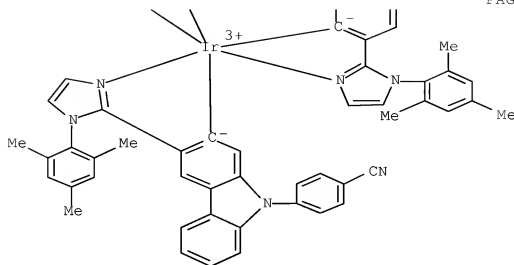
RL: TEM (Technical or engineered material use); USES (Uses)
(organic electroluminescent material, organic electroluminescent device, display, and lighting system)

RN 1017863-84-1 HCAPLUS

CN Iridium, tris[9-(4-cyanophenyl)-3-[1-(2,4,6-trimethylphenyl)-1H-imidazol-2-yl-κN3]-9H-carbazol-2-yl-κC]- (CA INDEX NAME)

PAGE 1-A

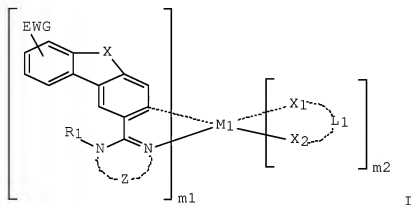




- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST electroluminescent display metal complex
- IT Electroluminescent devices
(displays; organic electroluminescent material, organic electroluminescent device, display, and lighting system)
- IT Luminescent screens
(electroluminescent; organic electroluminescent material, organic electroluminescent device, display, and lighting system)
- IT Coordination compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(organic electroluminescent material, organic electroluminescent device, display, and lighting system)
- IT 1017863-81-8 1017863-84-1 1017863-87-4
1017863-90-9 1017863-93-2 1017863-96-5
1017863-99-8 1017864-02-6 1017864-05-9
1017864-08-2 1017864-11-7 1017864-14-0
1017864-17-3 1017864-20-8 1017864-23-1 1017864-26-4
1017864-29-7 1017864-33-3 1017864-37-7
1017864-41-3 1017864-45-7 1017864-48-0
1017864-51-5 1017864-54-8
RL: TEM (Technical or engineered material use); USES (Uses)
(organic electroluminescent material, organic electroluminescent device, display, and lighting system)

AN 2008:412485 HCAPLUS Full-text
 DN 148:413921
 TI Organic electroluminescent material, organic
 electroluminescent device, display, and lighting system
 IN Sugino, Motoaki; Nishizeki, Masato
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 56pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

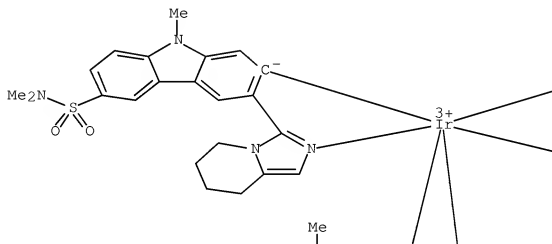
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2008074921	A	20080403	JP 2006-254130	200609 20
PRAI	JP 2006-254130		20060920		
OS	MARPAT 148:413921				
GI					

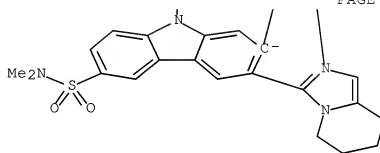
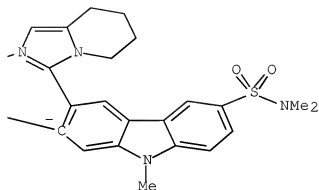


AB The invention refers to an organic electroluminescent material I [R1 = alkyl, cycloalkyl, alkenyl, alkynyl, aryl or heteroaryl; X = O, S, Se, Trace element or -NR2-; R2 = alkyl, cycloalkyl, alkenyl, alkynyl, aryl or heteroaryl; Z = atoms necessary to form a 5- or 6-membered ring; X1-L1-X2 = bidentate ligand; X1,2 = C, N or O; L1 = atoms forming a bidentate ligand with X1,2; m1 = 1, 2 or 3, m2 = 0, 1 or 2, m1 + m2 = 2 or 3; M1 = group 8 - 10 metal; EWG = electron withdrawing group having Hammett $\delta_p > 0.05$].

IT 1016541-20-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (organic ~~electroluminescent~~ material, organic
~~electroluminescent~~ device, display, and lighting system)
 RN 1016541-20-0 HCAPLUS
 CN Iridium, tris[6-[(dimethylamino)sulfonyl]-9-methyl-3-(5,6,7,8-
 tetrahydroimidazo[1,5-a]pyridin-3-yl-κN2)-9H-carbazol-2-yl-
 κC]- (CA INDEX NAME)

PAGE 1-A





- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST electroluminescent display metal complex
- IT Electroluminescent devices
 (displays; organic electroluminescent material, organic electroluminescent device, display, and lighting system)
- IT Luminescent screens
 (electroluminescent; organic electroluminescent material, organic electroluminescent device, display, and

lighting system)
 IT Coordination compounds
 RL: TEM (Technical or engineered material use); USES (Uses)
 (organic electroluminescent material, organic
 electroluminescent device, display, and lighting system)
 IT 1016541-12-0 1016541-14-2 1016541-16-4 1016541-18-6
 1016541-20-0 1016541-21-1 1016541-23-3 1016541-24-4
 1016541-25-5 1016541-26-6 1016541-27-7 1016541-28-8
 1016541-29-9 1016541-30-2 1016541-31-3 1016541-32-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (organic electroluminescent material, organic
 electroluminescent device, display, and lighting system)

L13 ANSWER 16 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2008:64605 HCAPLUS Full-text
 DN 148:157356
 TI Organic electroluminescent devices and display devices
 IN Otsubo, Akihiro; Takahashi, Yoshiaki
 PA Showa Denko K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 42pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2008010651	A	20080117	JP 2006-179893	20060629

PRAI JP 2006-179893 20060629

AB Organic EL devices include ≥1 layers containing polymers which contain structural units based on Ir complexes.

IT 942117-33-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (formation of polymers based on Ir complexes for electroluminescent devices and display devices)

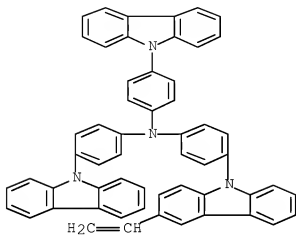
RN 942117-33-1 HCAPLUS

CN Iridium(1+), bis[3,5-difluoro-2-(2-pyridinyl-κN)phenyl-κC][2-[[[4-(di(2-pyridinyl-κN)amino)-3,5-dimethylphenoxy]carbonyl]amino]ethyl 2-methyl-2-propenoate]-, hexafluorophosphate(1-) (1:1), polymer with N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-yl)benzenamine and bis(3,5-dimethyl[1,1'-biphenyl]-4-yl)(4'-ethenyl-3,5-dimethyl[1,1'-biphenyl]-4-yl)borane (CA INDEX NAME)

CM 1

CRN 934399-25-4

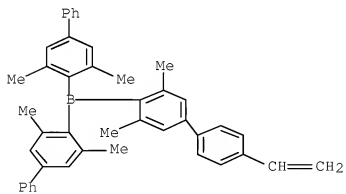
CMF C56 H38 N4



CM 2

CRN 856695-28-8

CMF C44 H41 B



CM 3

CRN 942117-32-0

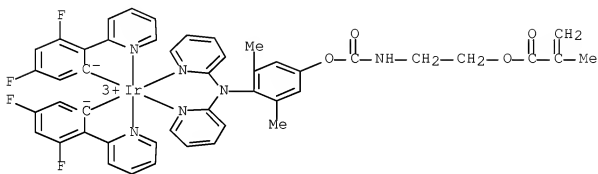
CMF C47 H38 F4 Ir N6 O4 . F6 P

CM 4

CRN 942117-31-9

CMF C47 H38 F4 Ir N6 O4

CCI CCS

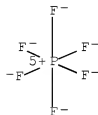


CM 5

CRN 16919-18-9

CMF F6 P

CCI CCS



CC 76-3 (Electric Phenomena)

ST org electroluminescent display EL device; polymer iridium

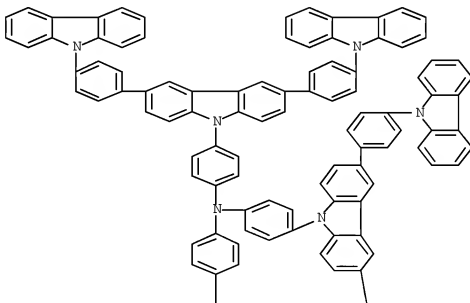
complex
 IT Electroluminescent devices
 (organic; formation of polymers based on Ir complexes for
 electroluminescent devices and display devices)
 IT 941603-30-1P 941603-31-2P 941603-33-4P 942117-29-5P
 942117-32-0P 1000776-61-3P 1001556-93-9P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (formation of polymers based on Ir complexes for
 electroluminescent devices and display devices)
 IT 942117-30-8P 942117-33-1P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (formation of polymers based on Ir complexes for
 electroluminescent devices and display devices)
 IT 77-58-7 358-23-6 429-41-4, Tetra-n-butyl ammonium fluoride
 584-08-7, Potassium carbonate 865-47-4 1202-34-2 3375-31-3
 6336-45-4 13716-12-6, Tri(tert-butyl) phosphine 14221-01-3
 17084-13-8, Potassium hexafluorophosphate 30674-80-7 149228-92-2
 391611-77-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (formation of polymers based on Ir complexes for
 electroluminescent devices and display devices)
 IT 512-63-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (formation of polymers based on Ir complexes for
 electroluminescent devices and display devices)

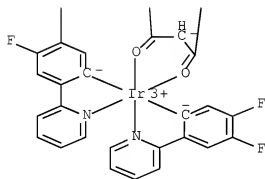
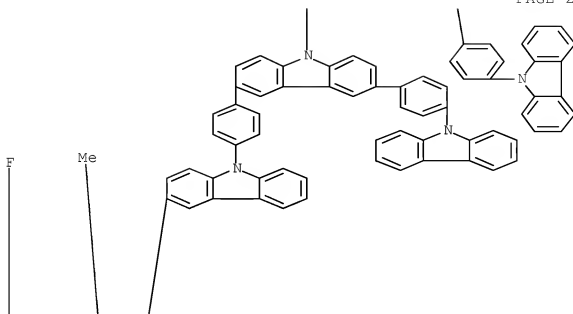
L13 ANSWER 17 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2007:788261 HCAPLUS Full-text
 DN 147:177280
 TI Organic electroluminescent element containing organic
 metal complex phosphor with dendrimeric structure, display and
 lighting device
 IN Tanaka, Tatsuo; Taka, Hideo
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokyo Koho, 52pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	
PI	JP 2007184348	A	20070719	JP 2006-472	200601 05

PRAI JP 2006-472 20060105
 AB The element has, between anode and cathode, a luminescent layer containing organic metal complex phosphor having dendrimeric partial structure, and another organic metal complex phosphor without the dendrimeric structure. Display device and lighting device using the element are also claimed. The element shows high luminescent efficiency and long lifetime.
 IT 944125-64-8
 RL: TEM (Technical or engineered material use); USES (Uses) (electroluminescent element containing organic metal complex phosphor having dendrimeric structure)
 RN 944125-64-8 HCAPLUS
 CN Iridium, [1-[9-[4-[9-[4-[bis[4-[3,6-bis[4-(9H-carbazol-9-yl)phenyl]-9H-carbazol-9-yl]phenyl]amino]phenyl]-6-[4-(9H-carbazol-9-yl)phenyl]-9H-carbazol-3-yl]phenyl]-9H-carbazol-3-yl]-1,3-butanedionato-κO1,κO3]bis[4,5-difluoro-2-(2-pyridinyl-κN)phenyl]-KC]- (CA INDEX NAME)

PAGE 1-A



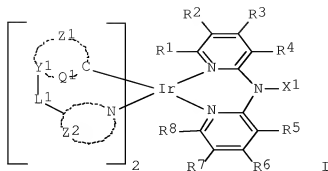


CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 ST phosphor dendrimeric org metal complex **electroluminescent**
 element
 IT Electric lamps
 (**electroluminescent** element and lighting device containing

organic metal complex phosphor having dendrimeric structure)
 IT Electroluminescent devices
 Phosphors
 (electroluminescent element containing organic metal complex
 phosphor having dendrimeric structure)
 IT Dendrimers
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electroluminescent element containing organic metal complex
 phosphor having dendrimeric structure)
 IT 376367-93-0 693794-98-8 800395-01-1 944125-58-0 944125-59-1
 944125-60-4 944125-61-5 944125-62-6 944125-63-7
 944125-64-8 944128-60-3 944128-61-4 944128-62-5
 944128-63-6 944128-64-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electroluminescent element containing organic metal complex
 phosphor having dendrimeric structure)
 OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3
 CITINGS)
 L13 ANSWER 18 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2007:665910 HCAPLUS Full-text
 DN 147:105578
 TI Surface-emitting organic electroluminescent devices with
 high color purity, their macromolecular materials, and displays
 therewith
 IN Otsubo, Akihiro; Takahashi, Yoshiaki
 PA Showa Denko K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 36pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 2007153917	A	20070621	JP 2005-346588	20051130
PRAI JP 2005-346588		20051130		

 GI



AB The title materials are polymers having unit derived from Ir complex I [R1-R8 = H, substituent; X1 = H, aryl, azacycle; R1-R8 and/or X1 essentially include polymerizable group; Z1, Y1 = 5- or 6-membered (hetero)cycle; Z2 = 5- or 6-membered heterocycle; L1 = single bond, bivalent bridging group; Y1 = N, C; Q1 = single bond (Y1 = N) or double bond (Y1 = C)].

IT 942117-33-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(surface-emitting organic EL devices with high color purity containing polymers with ortho-metalized complex-derived units)

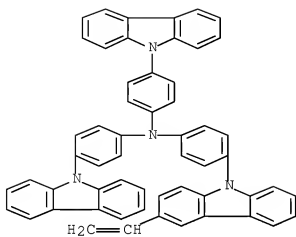
RN 942117-33-1 HCAPLUS

CN Iridium(1+), bis[3,5-difluoro-2-(2-pyridinyl-kN)phenyl-kC][2-[[[4-(di(2-pyridinyl-kN)amino)-3,5-dimethylphenoxy]carbonyl]amino]ethyl 2-methyl-2-propenoate]-, hexafluorophosphate(1-) (1:1), polymer with N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-yl)benzenamine and bis(3,5-dimethyl[1,1'-biphenyl]-4-yl)(4'-ethenyl-3,5-dimethyl[1,1'-biphenyl]-4-yl)borane (CA INDEX NAME)

CM 1

CRN 934399-25-4

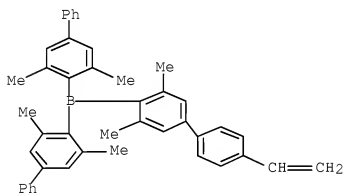
CMF C56 H38 N4



CM 2

CRN 856695-28-8

CMF C44 H41 B



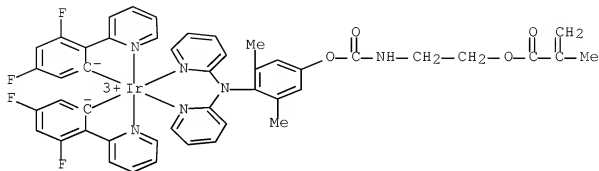
CM 3

CRN 942117-32-0

CMF C47 H38 F4 Ir N6 O4 . F6 P

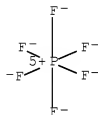
CM 4

CRN 942117-31-9
 CMF C47 H38 F4 Ir N6 O4
 CCI CCS



CM 5

CRN 16919-18-9
 CMF F6 P
 CCI CCS



- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 73
- ST electroluminescent color purity ortho metalized iridium complex polymer; blue emitting electroluminescent polymer ortho metalized complex
- IT Electroluminescent devices
 (blue-emitting; surface-emitting organic EL devices with high

color

purity containing polymers with ortho-metalized complex-derived units)

IT Electroluminescent devices

(displays; surface-emitting organic EL devices with high color purity containing polymers with ortho-metalized complex-derived units)

IT Luminescent substances

(electroluminescent, blue-emitting; surface-emitting organic EL devices with high color purity containing polymers with ortho-metalized complex-derived units)

IT Luminescent screens

(electroluminescent; surface-emitting organic EL devices with high color purity containing polymers with ortho-metalized complex-derived units)

IT 942117-30-8P 942117-33-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(surface-emitting organic EL devices with high color purity

containing

polymers with ortho-metalized complex-derived units)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L13 ANSWER 19 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:621524 HCAPLUS Full-text

DN 147:153628

TI Manufacture and application of electro-phosphorescent conjugated polymer containing polar group

IN Yang, Wei; Zhang, Yong; Wang, Lei; Xu, Yunhua; Peng, Junbiao; Cao, Yong

PA South China University of Technology, Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 58pp.

CODEN: CNXXEV

DT Patent

LA Chinese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	
PI CN 1974709	A	20070606	CN 2006-10036221	20060630

PRAI CN 2006-10036221 20060630

AB The title conjugated polymer comprises a conjugated structure unit and a metal complex on the main or side chain of the conjugated polymer. The conjugated structure unit comprises 5-95 mol.% polar

group or ionic group side chain on the main chain or terminal group of the conjugated polymer. The conjugated structure unit can be p-benzene, carbazole, fluorene or p-phenylene acetylene containing substituted alkyl or alkoxyl with amino, quaternary ammonium salt group, nitrile, carboxyl, sulfonic group or phosphate group on its side chain. The conjugated polymer has the functions of high luminescence and good cathodic interface modification. The conjugated polymer can improve the quantum efficiency of metal cathode with high power function. The conjugated polymer can be used in organic/polymer luminescent device, information display and solar photovoltaic cells.

IT 943311-43-1P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture and application of electro-phosphorescent conjugated polymer containing polar group)

RN 943311-43-1 HCAPLUS

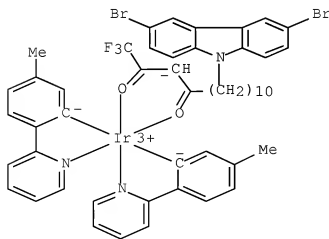
CN Iridium, [14-(3,6-dibromo-9H-carbazol-9-yl)-1,1,1-trifluoro-2,4-tetradecanedionato-κO2,κO4]bis[5-methyl-2-(2-pyridinyl-κN)phenyl-κC]-, polymer with N,N-dimethyl-3,6-bis(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-9H-carbazole-9-propanamine (CA INDEX NAME)

CM 1

CRN 943311-42-0

CMF C50 H47 Br2 F3 Ir N3 O2

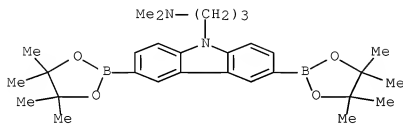
CCI CCS



CM 2

CRN 943251-77-2

CMF C29 H42 B2 N2 O4

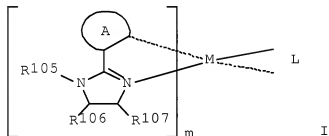


CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 ST phosphorescent **electroluminescent** device conjugated
 polymer iridium platinum complex manuf
 IT Luminescent substances
 (electroluminescent; manufacture and application of
 electro-phosphorescent conjugated polymer containing polar group)
 IT **Electroluminescent** devices
 Ink-jet printing
 Phosphorescent substances
 (manufacture and application of electro-phosphorescent conjugated
 polymer containing polar group)
 IT 123864-00-6P 138184-36-8P 502634-44-8P 502687-51-6P
 943251-81-8P 943251-82-9P 943251-83-0P 943251-84-1P
 943251-85-2P 943311-38-4P 943311-40-8P **943311-43-1P**
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)
 (manufacture and application of electro-phosphorescent conjugated
 polymer containing polar group)
 L13 ANSWER 20 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2007:457616 HCAPLUS Full-text
 DN 146:471831
 TI Luminescent polymer for organic **electroluminescent** device
 IN Takahashi, Yoshiaki; Yamaguchi, Akihiko
 PA Showa Denko K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 35pp.

CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007106793	A	20070426	JP 2005-296339	20051011
PRAI	JP 2005-296339		20051011		
GI					



AB The invention relates to a luminescent polymer, suited for use in making a white-emitting organic electroluminescent device, comprising a polymer including a metal complex unit represented by I [M = Ir, Pt, Au, and Pd; R105 = F-containing substituted group; R106 and R107 = H, substituted group, and may be joined to form a ring; A = 5- or 6-member ring; L = monoanionic bidentate ligand containing polymerizable group; m = 1 or 2 integer; and C-C bond between R106- and R107-substituted carbons may be a single or double bond].

IT 935528-44-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (luminescent polymer for organic electroluminescent device)

RN 935528-44-2 HCAPLUS

CN Iridium, [3-[(4-ethenylphenyl)methoxy]-2-pyridinecarboxylato-κN1,κO2]bis[2-[1-(2,3,4,5,6-pentafluorophenyl)-1H-imidazol-2-yl-κN3]phenyl-κC]-, polymer with N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-(3-ethenyl-9H-carbazol-9-

yl)benzenamine and 3-[4-(1,1-dimethylethyl)phenyl]-5-(4'-ethenyl[1,1'-biphenyl]-4-yl)-4-phenyl-4H-1,2,4-triazole (CA INDEX NAME)

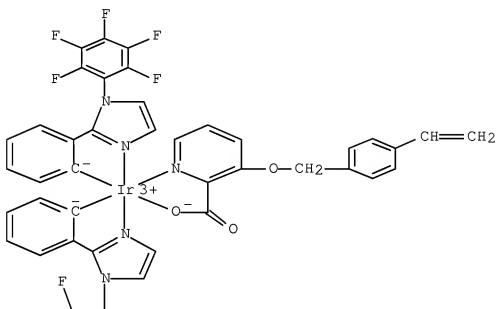
CM 1

CRN 935528-40-8

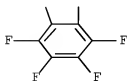
CMF C45 H24 F10 Ir N5 O3

CCI CCS

PAGE 1-A



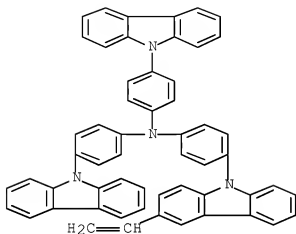
PAGE 2-A



CM 2

CRN 934399-25-4

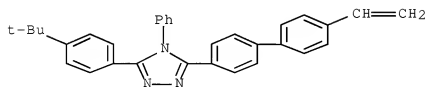
CMF C56 H38 N4



CM 3

CRN 909703-02-2

CMF C32 H29 N3



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST luminescent polymer org **electroluminescent** device metal complex

IT Luminescent substances
(**electroluminescent**; luminescent polymer for organic

electroluminescent device)

IT Electroluminescent devices
Phosphorescent substances
(luminescent polymer for organic electroluminescent device)

IT Coordination compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(luminescent polymer for organic electroluminescent device)

IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(luminescent polymer for organic electroluminescent device)

IT 62-53-3, Benzenamine, reactions 75-36-5, Acetyl chloride 98-73-7
586-75-4 874-24-8, 3-Hydroxypicolinic acid 1075-49-6 1592-20-7
2156-04-9 2760-98-7 7803-57-8 13569-57-8, Iridium trichloride
trihydrate 26537-19-9 58328-31-7 139092-78-7 220173-84-2
847997-60-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(luminescent polymer for organic electroluminescent device)

IT 728045-11-2P 847738-92-5P 909703-02-2P 934399-23-2P
934399-24-3P 934399-25-4P 935528-37-3P 935528-38-4P
935528-39-5P 935528-40-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(luminescent polymer for organic electroluminescent device)

IT 935528-41-9P 935528-42-0P 935528-44-2P
935528-45-3P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(luminescent polymer for organic electroluminescent device)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

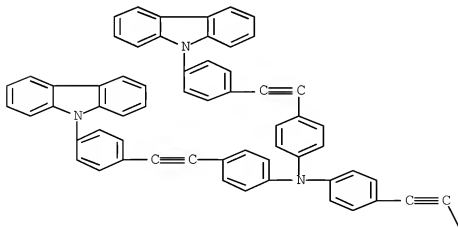
L13 ANSWER 21 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2006:1187867 HCAPLUS Full-text
DN 146:123243
TI Photoluminescence characteristics of dendrimers containing
(tris(8-hydroxyquinoline)aluminum) as a core unit
AU Furusake, Shinya; Maruyama, Sumio; Sasabe, Hiroyuki; Adachi, Chihaya
CS Department of Photonics Materials Science, Chitose Institute of
Science and Technology (CIST), 758-65 Bibi, Chitose, 066-8655, Japan
SO Kobunshi Ronbunshu (2006), 63(10), 675-680
CODEN: KBRBA3; ISSN: 0386-2186

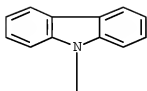
PB Kobunshi Gakkai
 DT Journal
 LA Japanese
 AB We report on photoluminescence (PL) characteristics of dendrimers having (tris(8-hydroxyquinoline)aluminum) (Alq3) as a core unit. Although Alq3 derivs. are generally insol., the dendrimers were soluble in conventional organic solvents due to the presence of bulky dendron. We measured the transient PL and absolute PL efficiency of the dendrimers, dendron and AlClq3 (core unit), and we clarified the location of π -conjugation, which is an origin of PL. The PL characteristics indicated that π -conjugation in the dendrimers is localized between a dendron and a quinoline ligand. Although the PL efficiencies are .vphi.PL = 20-40% in their solid films, the EL (electroluminescence) efficiencies are limited to .vphi.EL .apprx. 10-2%.

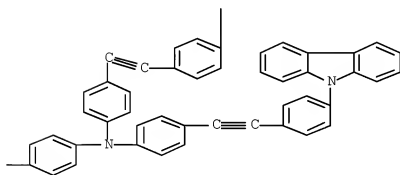
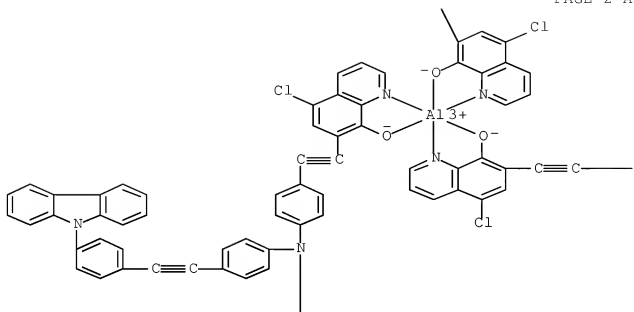
IT 849110-50-5
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (photoluminescence characteristics of dendrimers containing (tris(hydroxyquinoline)aluminum) as core unit)

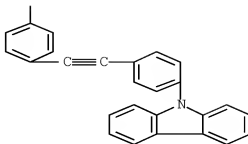
RN 849110-50-5 HCAPLUS
 CN Aluminum, tris[7-[2-[4-[bis[4-[2-[4-(9H-carbazol-9-yl)phenyl]ethynyl]phenyl]amino]phenyl]ethynyl]-5-chloro-8-quinolinolato- κ N1, κ O8]-, (OC-6-22)- (CA INDEX NAME)

PAGE 1-A









CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 29, 73
 ST hydroxyquinoline aluminum core dendrimer photoluminescence
 electroluminescence
 IT Electroluminescence
 Electroluminescent devices
 Fluorescence
 Luminescence
 (photoluminescence characteristics of dendrimers containing
 (tris(hydroxyquinoline)aluminum) as core unit)
 IT 41584-66-1 262861-81-4 848889-57-6 849110-50-5
 918151-32-3
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (photoluminescence characteristics of dendrimers containing
 (tris(hydroxyquinoline)aluminum) as core unit)
 L13 ANSWER 22 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2006:1123834 HCAPLUS Full-text
 DN 145:438768
 TI Luminescent organometallic materials containing covalently bound
 host carbazolyl moieties with cyclometalated luminescent dopants and
 organic electroluminescence display devices using the said
 compounds
 IN Park, Soo Jin; Shin, Dae Yup; Jung, Dong Hyun; Kwon, Tae Hyuk; Kim,
 Myoung Ki; Hong, Jong In
 PA Samsung SDI Co., Ltd., S. Korea; Seoul National University Industry
 Foundation
 SO U.S. Pat. Appl. Publ., 30 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI  US 20060237715      A1    20061026      US 2006-364521
                                           200602
                                           27

US 7541100              B2    20090602
KR 611885                B1    20060804      KR 2005-33083
                                           200504
                                           21

JP 2006298900           A    20061102      JP 2006-6639
                                           200601
                                           13

EP 1743900              A1    20070117      EP 2006-112229
                                           200604
                                           05

EP 1743900              B1    20080813
    R:  AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
        IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK,
        TR, AL, BA, HR, MK, YU
CN 1861618              A    20061115      CN 2006-10075809
                                           200604
                                           18

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PRAI KR 2005-33083 A 20050421

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS CASREACT 145:438768; MARPAT 145:438768

AB Organometallic 2-pyridinecarboxylates with 3,5-di-9-carbazolylphenyl moieties tethered by oxyalkylene or oxyphenylene bridges, L3-nM[kN, kO-R1C5H2N-2-CO2-XC6H3-3-(9-C12H6R2R3)-5-(9-C12H6R4R5)]n [1, preferably X = OCH2, OCH2-1,3-C6H3R7OCH2, OCH2C6H3R6OCH2C6H3R8OCH2; R1-R8 = H, CN, OH, SH, halo, C1-30 alkyl(oxy), C2-30 alkenyl, C2-30 (hetero)aryl(oxy) acyl and their combinations; M - Ir, Os, Pt, Pb, Re, Ru; L = bidentate ligand, preferably cyclometalated 2-phenylpyridine derivative, n = 1, 2], preferably having HOMO-LUMO gaps difference of 0-400 nm for both parts of the mol., useful as an phosphorescent substances for one-component light-emitting layers with improved solubility and efficiency, were prepared by a process comprising etherification of carbazolyl-substituted aralkyl bromides BrX-3,5-C6H3(9-C12H8N)2 with 3-hydroxy-2-pyridinecarboxylic acid with subsequent ligation to metal cyclometalated complex L3-nMYn. The present embodiments relate to organometallic compds. in which the host and dopant moieties are connected to make energy transmission possible in a mol. level, improving the light-emitting efficiency, brightness, color purity and lifetime; the prepared materials have enhanced solubility, which allows the preparation of the light-emitting devices by inkjet, spin coating or other wet processes. In an example, reaction of 3,5-dibromotoluene with 9H-carbazole catalyzed by 10 mol% of CuI in the presence of K3PO4 and 1,2-cyclohexanediamine with subsequent bromination gave 1-(bromomethyl)-

3,5-bis(9-carbazolyl)benzene, which was etherified with [(F2PhPy)2Ir(3-hydroxy-2-pyridinecarboxylate)] [F2PhPy = 3,5-difluoro-2-(2-pyridinyl)phenyl] to yield the compound of the invention 1 (L = F2PhPy, n = 1, X = OCH2 R2-R5 = H). In another example, **electroluminescent** device was prepared by placing of a 200 Å thick light-emitting layer containing 12% of compound 1 (L = F2PhPy, n = 1, X = OCH2 R2-R5 = H) and 88% of CBP between 600 Å of IDE 406 hole injection layer, 300 Å thick TPD hole-transporting layer, and 50 Å BCP hole-blocking layer, 200 Å of Alq3 electron-transporting layer and LiF-doped 3000 Å Al cathode; the device exhibited excellent efficiency, driving voltage, color purity and lifetime.

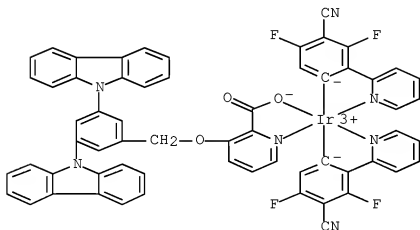
IT 912815-54-4P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)

RN 912815-54-4 HCAPLUS

CN Iridium, bis[4-cyano-3,5-difluoro-2-(2-pyridinyl-κN)phenyl-κC][3-[(3,5-di-9H-carbazol-9-ylphenyl)methoxy]-2-pyridinecarboxylato-κN1,κO2]- (CA INDEX NAME)



INCL 257040000; 546002000; 977939000; 313504000

CC 29-13 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 73, 76

ST iridium phenylpyridine tethered carbazole light emitting **electroluminescent** cyclometalated complex; **electroluminescent** cyclometalated complex covalently bound host dopant prepn process; pyridinecarboxylate iridium

phenylpyridine carbazoyl host tethered dopant
 electroluminescent device; metallacycle phenylpyridine
 pyridinecarboxylate carbazoyl electroluminescent complex
 device

IT Alkyl bromides
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (aralkyl bromides; preparation of host-dopant iridium
 cyclometalated
 phenylpyridine pyridinecarboxylate electroluminescent
 complexes with ether-tethered carbazoyl groups)

IT Ligands
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PYP (Physical process); RCT (Reactant); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process); RACT
 (Reactant or reagent); USES (Uses)
 (bidentate, 2-phenylpyridines, complexes; preparation of host-
 dopant
 iridium cyclometalated phenylpyridine pyridinecarboxylate
 electroluminescent complexes with ether-tethered
 carbazoyl groups)

IT Carboxylic acids
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PYP (Physical process); RCT (Reactant); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process); RACT
 (Reactant or reagent); USES (Uses)
 (complexes, 2-pyridinecarboxylates; preparation of host-dopant
 iridium
 cyclometalated phenylpyridine pyridinecarboxylate
 electroluminescent complexes with ether-tethered
 carbazoyl groups)

IT Metalation
 (cyclometalation; preparation of host-dopant iridium
 cyclometalated
 phenylpyridine pyridinecarboxylate electroluminescent
 complexes with ether-tethered carbazoyl groups)

IT Organometallic compounds
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PYP (Physical process); SPN (Synthetic
 preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (electroluminescent; preparation of host-dopant iridium
 cyclometalated phenylpyridine pyridinecarboxylate
 electroluminescent complexes with ether-tethered
 carbazoyl groups)

IT Metallacycles
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PYP (Physical process); RCT (Reactant); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process); RACT

- (Reactant or reagent); USES (Uses)
 (iridium; preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT Heterocyclic compounds
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (nitrogen, carbazoles, complexes; preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT Complexation
Electroluminescent devices
 Etherification
 Luminescence, **electroluminescence**
 Phosphorescent substances
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT 2085-33-8, Aluminum, tris(8-quinolinolato)- 4733-39-5, Bathocuproin 58328-31-7 65181-78-4, TPD 627090-84-0, IDE 406
 RL: DEV (Device component use); USES (Uses)
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT 912815-47-5P
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT 912815-52-2P 912815-53-3P **912815-54-4P** 912815-55-5P
912815-56-6P 912815-57-7P 912815-58-8P
 912815-59-9P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)
- IT 86-74-8, 9H-Carbazole 109-04-6, 2-Bromopyridine 143-15-7, Dodecyl bromide 874-24-8 1611-92-3 4926-28-7 29654-55-5 144025-03-6
 RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)

IT 391250-41-2P 391604-55-0P 391611-77-1P 481694-83-1P
 862379-44-0P 879628-31-6P 912815-46-4P 912815-48-6P
 912815-49-7P 912815-50-0P 912815-51-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)

IT 1148111-93-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of host-dopant iridium cyclometalated phenylpyridine pyridinecarboxylate **electroluminescent** complexes with ether-tethered carbazolyl groups)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 23 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2006:854462 HCAPLUS Full-text
 DN 147:374029
 TI Monodispersed fluorescent and phosphorescent oligofluorene functionalized molecular stars: synthesis, characterization, luminescent and **electroluminescent** properties
 AU Liu, Qinde; Lu, Jianping; Ding, Jianfu; Day, Michael; Tao, Ye
 CS Institute for Chemical Process and Environmental Technology, National Research Council of Canada, Ottawa, ON, K1A 0R6, Can.
 SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2006), 47(2), 559-560
 CODEN: ACPPAY; ISSN: 0032-3934
 PB American Chemical Society, Division of Polymer Chemistry
 DT Journal; (computer optical disk)
 LA English
 AB Four series of monodispersed oligofluorene functionalized stars with 4,4',4"-tris(carbazol-9-yl)phenylamine, pyrene, and cyclometalated Pt and Ir cores were prepared. The length of the oligofluorene arms was 1-4 fluorene units and mol. wts. were 2323-10,190 Da. All the oligomers had good film-forming ability. The carbazolyphenylamine oligomers showed bright deep blue fluorescence, those with a pyrene core fluoresced greenish blue, both in solution and in the solid state with high quantum efficiency. The carbazolyphenylamine oligomers are efficient deep blue emitters in **electroluminescent** devices with power efficiency ≤ 0.14 weight/weight at 115 cd/m² and a better large-gap host for red phosphorescent emitters than poly(vinylcarbazole) while the pyrene oligomers display bright greenish-blue **electroluminescence**. The Pt and Ir oligomers are red

and green phosphorescent emitters in both the solid state and solution with metal-to-ligand charge transfer. The length of the oligofluorene arms impacts the efficiency of energy transfer from singlet to triplet state. Their use in **electroluminescent** devices is being studied.

IT 949912-72-5

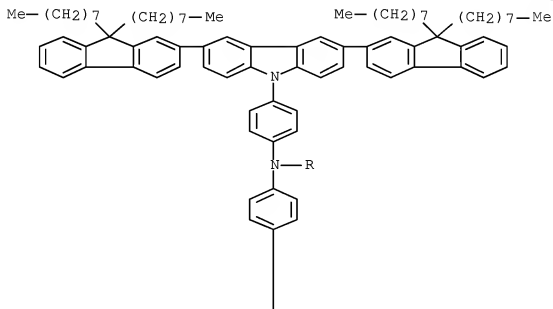
RL: PRP (Properties); TEM (Technical or engineered material use);
USES (Uses)

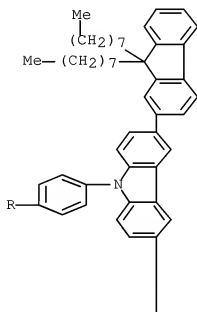
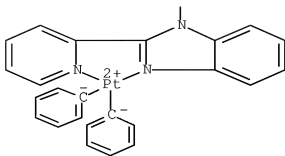
(monodispersed fluorescent and phosphorescent oligofluorene functionalized mol. stars: synthesis, characterization, luminescent and **electroluminescent** properties)

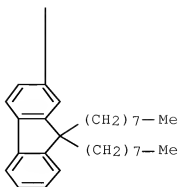
RN 949912-72-5 HCAPLUS

CN Platinum, [N,N-bis[4-[3,6-bis(9,9-dioctyl-9H-fluoren-2-yl)-9H-carbazol-9-yl]phenyl]-4-[2-(2-pyridinyl-κN)-1H-benzimidazol-1-yl-κN3]benzenamine]diphenyl-, (SP-4-3)- (CA INDEX NAME)

PAGE 1-A







- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 22
- ST monodispersed fluorescent phosphorescent oligofluorene functionalized mol star; LED synthesis luminescence electroluminescent property
- IT **Electroluminescence**
 Electroluminescent devices
 Luminescence
 UV and visible spectra
 (monodispersed fluorescent and phosphorescent oligofluorene functionalized mol. stars: synthesis, characterization, luminescent and **electroluminescent** properties)
- IT 7440-04-2, Osmium, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (monodispersed fluorescent and phosphorescent oligofluorene functionalized mol. stars: synthesis, characterization, luminescent and **electroluminescent** properties)
- IT 935778-28-2 949910-03-6
 RL: PRP (Properties)
 (monodispersed fluorescent and phosphorescent oligofluorene functionalized mol. stars: synthesis, characterization, luminescent and **electroluminescent** properties)
- IT 945255-82-3 945255-83-4 945255-84-5 949910-39-8 949910-91-2
 949911-00-6 949911-33-5 949912-11-2 949912-30-5
 949912-72-5 949912-75-8
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (monodispersed fluorescent and phosphorescent oligofluorene functionalized mol. stars: synthesis, characterization, luminescent and **electroluminescent** properties)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7429-90-5,
 Aluminum, uses 7789-24-4, Lithium fluoride, uses 50851-57-5
 50926-11-9, Indium tin oxide 126213-51-2, PEDOT 372956-40-6,
 1,3,5-Tris(4-fluorobiphenyl-4-yl)benzene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (monodispersed fluorescent and phosphorescent oligofluorene
 functionalized mol. stars: synthesis, characterization,
 luminescent and electroluminescent properties)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1
 CITINGS)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 24 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:1319148 HCAPLUS Full-text
 DN 144:204580

TI Novel supramolecular polymers based on zinc-salen chromophores for
 efficient light-emitting diodes

AU Peng, Qiang; Xie, Minggui; Huang, Yan; Lu, Zhiyun; Cao, Yong
 CS Department of Chemistry, Sichuan University, Chengdu, 610064, Peop.
 Rep. China

SO Macromolecular Chemistry and Physics (2005), 206(23), 2373-2380
 CODEN: MCHPES; ISSN: 1022-1352

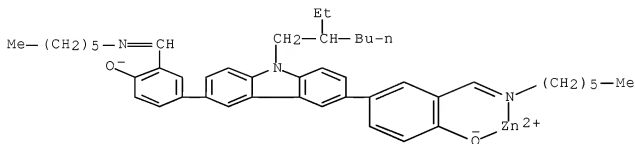
PB Wiley-VCH Verlag GmbH & Co. KGaA
 DT Journal
 LA English
 OS CASREACT 144:204580

AB Supramol. polymers based on zinc-salen chromophores were readily
 prepared via ligand-metal coordination. These polymers were
 characterized by FTIR, NMR, GPC and elemental anal. All the polymers
 were readily soluble in common organic solvents and had substantially
 good thermal properties. Cyclic voltammetry revealed they had LUMO
 energy levels ranging from -3.20 to -3.23 eV and HOMO energy levels
 ranging from -6.13 to -6.15 eV. The polymer films can emit strong
 green photoluminescence (PL) with relatively high quantum
 efficiencies of 42-51%. Light-emitting diodes with the configuration
 ITO/PEDOT/polymer/BCP/Alq3/LiF/Al were efficient green emitters, with
 maximum current efficiencies of 0.9-2.3 cd A⁻¹. The preliminary EL
 results thus suggest that these polymers are potential candidates for
 efficient green emission in polymer LEDs.

IT 875432-46-5P
 RL: CPS (Chemical process); DEV (Device component use); PEP
 (Physical, engineering or chemical process); PRP (Properties); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process); USES
 (Uses)
 (polymeric; preparation, electrochem. and luminescence properties

of

zinc-salen coordination polymers for green light-emitting diodes)
 RN 875432-46-5 HCAPLUS
 CN Zinc, [4-[9-(2-ethylhexyl)-6-[3-[(hexylimino)methyl]-4-hydroxyphenyl]-9H-carbazol-3-yl]-2-[(hexylimino-kN)methyl]phenolato(2-)-κO]- (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 73
 IT **Electroluminescent** devices
 (green-emitting; preparation, electrochem. and luminescence properties
 of zinc-salen coordination polymers for green light-emitting diodes)
 IT 875432-45-4P **875432-46-5P** 875432-47-6P
 RL: CPS (Chemical process); DEV (Device component use); PEP
 (Physical, engineering or chemical process); PRP (Properties); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process); USES
 (Uses)
 (polymeric; preparation, electrochem. and luminescence properties
 of zinc-salen coordination polymers for green light-emitting diodes)
 OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
 RE.CNT 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L13 ANSWER 25 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:1168852 HCAPLUS Full-text
 DN 143:448990
 TI Phosphorescent polymer and production process thereof, organic **electroluminescence** device, and metal complex-containing compound and production process thereof
 IN Yasuda, Hiroyuki; Oh, Hyunshik; Shiraki, Shinji
 PA Jsr Corporation, Japan

SO Eur. Pat. Appl., 81 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1591511	A2	20051102	EP 2005-9218	20050427
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
	JP 2005314505	A	20051110	JP 2004-132508	20040428
	JP 2005325048	A	20051124	JP 2004-143606	20040513
	JP 4333473	B2	20090916		20040611
	JP 2005350414	A	20051222	JP 2004-174372	20040611
	JP 2005350415	A	20051222	JP 2004-174373	20040611
	JP 4296995	B2	20090715		20050426
	US 20050244674	A1	20051103	US 2005-114001	20050428
	KR 2006045856	A	20060517	KR 2005-35658	20050428
PRAI	JP 2004-132508	A	20040428		
	JP 2004-143606	A	20040513		
	JP 2004-174372	A	20040611		
	JP 2004-174373	A	20040611		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:448990

AB Phosphorescent polymers are described which comprise a metal complex-containing group having a phenylpyridine structure bonded to a main chain containing an aromatic compound group. Methods for producing the phosphorescent polymers are described which entail reacting a metal complex-containing compound having 2 reactive functional groups with an aromatic compound having 2 reactive functional groups in the presence of a catalyst. Organic **electroluminescent** devices are also

described which comprise a luminescent layer formed by a phosphorescent polymer. Metal complex-containing compds. and their production are also described.

IT 868528-29-4P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(phosphorescent polymers with metal- complex-containing side

groups

and their production and metal complexes and their production and

organic

electroluminescent devices using the polymers)

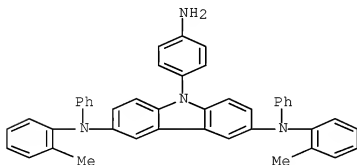
RN 868528-29-4 HCAPLUS

CN Iridium, [μ -[(2,7-dibromo-9H-fluoren-9-ylidene)bis[4,1-butanediyl]oxy[6-(2-pyridinyl- κ N)-3,1-phenylene- κ C]]]tetrakis[2-(2-pyridinyl- κ N)phenyl- κ C]di-, polymer with 9-(4-aminophenyl)-N,N'-bis(2-methylphenyl)-N,N'-diphenyl-9H-carbazole-3,6-diamine and 1,1'-oxybis[4-bromobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 868528-28-3

CMF C44 H36 N4



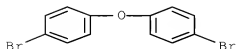
CM 2

CRN 868528-23-8

CMF C87 H68 Br2 Ir2 N6 O2

CCI CCS

CMF C12 H8 Br2 O



IC ICM C09K011-06
 ICS C08G061-10; H01L051-30; C07F015-00

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38, 76

ST metal complex side group phosphorescent polymer org
electroluminescent device

IT **Electroluminescent** devices
 (organic; phosphorescent polymers with metal- complex-containing side groups and their production and metal complexes and their production and organic **electroluminescent** devices using the polymers)

IT Phosphorescent substances
 (phosphorescent polymers with metal- complex-containing side groups and their production and metal complexes and their production and organic **electroluminescent** devices using the polymers)

IT 868528-26-1P 868528-27-2P **868528-29-4P**
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (phosphorescent polymers with metal- complex-containing side groups and their production and metal complexes and their production and organic **electroluminescent** devices using the polymers)

IT 868528-17-0P 868528-18-1P 868528-19-2P 868528-20-5P
 868528-21-6P 868528-22-7P 868528-23-8P 868528-24-9P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (phosphorescent polymers with metal- complex-containing side groups and their production and metal complexes and their production and organic **electroluminescent** devices using the polymers)

IT 98-80-6, Phenylboronic acid 106-37-6, 1,4-Dibromobenzene

108-88-3, Toluene, reactions 109-04-6, 2-Bromopyridine 110-52-1,
 1,4-Dibromobutane 6602-32-0, 2-Bromo-3-hydroxypyridine
 6825-20-3, 3,6-Dibromocarbazole 7726-95-6, Bromine, reactions
 14348-75-5, 2,7-Dibromofluorenone 16433-88-8, 2,7-Dibromofluorene
 36603-49-3 61676-62-8, 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-
 dioxaborolane 122775-35-3, 3,4-Dimethoxyphenylboronic acid
 330649-80-4 337526-85-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(phosphorescent polymers with metal- complex-containing side

groups

and their production and metal complexes and their production and

organic

electroluminescent devices using the polymers)

IT 51035-40-6P 63996-36-1P 109306-86-7P 373502-69-3P
 868266-33-5P 868266-34-6P 868266-35-7P 868266-36-8P
 868266-37-9P 868266-38-0P 868266-39-1P 868266-40-4P
 868266-41-5P 868266-42-6P 868266-43-7P 868266-44-8P
 868266-45-9P 868266-46-0P 868266-47-1P 868266-48-2P
 868266-49-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

RACT (Reactant or reagent)

(phosphorescent polymers with metal- complex-containing side

groups

and their production and metal complexes and their production and

organic

electroluminescent devices using the polymers)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (7
 CITINGS)

L13 ANSWER 26 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:1130746 HCAPLUS Full-text

DN 143:413207

TI Organic electroluminescent device material, organic
 electroluminescent device, display and illuminating device

IN Oshiyama, Tomohiro; Katoh, Eisaku; Kita, Hiroshi; Oi, Shuichi;
 Inoue, Yoshio

PA Konica Minolta Holdings, Inc., Japan

SO PCT Int. Appl., 64 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005097942	A1	20051020	WO 2005-JP4682
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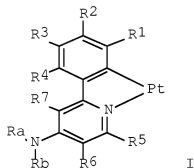
200503

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI JP 2004-103251 A 20040331

GI



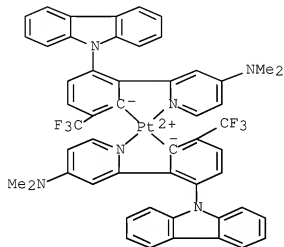
AB Disclosed is an organic **electroluminescent** device material which is characterized by containing a platinum complex represented by the general formula I, wherein a nitrogen-containing group is introduced at the 4-position of a Ph pyridine, which is a ligand of the platinum complex, and a specific substituent is further introduced at a specific position thereof. In the above formula, R1, R2, R3, R4, R5, R6 and R7 resp. represent a hydrogen atom or a substituent, and at least one of R1, R2, R3 and R4 represents an electron-donating group. Also disclosed are an organic EL device, illuminating device and display using such an organic **electroluminescent** device material.

IT 867044-90-4

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic **electroluminescent** device material, organic **electroluminescent** device, display and illuminating

device)
 RN 867044-90-4 HCAPLUS
 CN Platinum, bis[3-(9H-carbazol-9-yl)-2-[4-(dimethylamino)-2-pyridinyl-
 κN]-6-(trifluoromethyl)phenyl-κC]- (9CI) (CA INDEX
 NAME)



IC ICM C09K011-06
 ICS H05B033-14; H05B033-22
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 78
 ST org **electroluminescent** device material display
 illuminating
 IT Luminescent substances
 (electroluminescent; organic **electroluminescent**
 device material, organic **electroluminescent** device,
 display and illuminating device)
 IT **Electroluminescent** devices
 (organic **electroluminescent** device material, organic
electroluminescent device, display and illuminating
 device)
 IT 2085-33-8, Alq3 4733-39-5, BCP 58328-31-7, CBP 123847-85-8,
 α-NPD 867044-67-5 867044-80-2
 RL: DEV (Device component use); USES (Uses)
 (organic **electroluminescent** device material, organic
electroluminescent device, display and illuminating
 device)
 IT 867044-65-3 867044-66-4 867044-68-6 867044-69-7 867044-70-0

867044-71-1 867044-72-2 867044-73-3 867044-74-4 867044-75-5
 867044-76-6 867044-77-7 867044-78-8 867044-79-9 867044-81-3
 867044-82-4 867044-83-5 867044-84-6 867044-85-7 867044-86-8
 867044-88-0 867044-89-1 ~~867044-90-4~~ 867044-91-5
 867044-92-6 867044-93-7 867044-94-8

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic electroluminescent device material, organic electroluminescent device, display and illuminating device)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 27 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:1130744 HCAPLUS Full-text

DN 143:413279

TI Organic electroluminescent device material, organic electroluminescent device and display and illuminating device

IN Oshiyama, Tomohiro; Suzuri, Yoshiyuki; Kita, Hiroshi; Katoh, Eisaku

PA Konica Minolta Holdings, Inc., Japan

SO PCT Int. Appl., 68 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2005097940	A1	20051020	WO 2005-JP4678	

200503
16

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1731584

A1

20061213

EP 2005-720929

200503
16

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
 IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR
 US 20070196687 A1 20070823 US 2006-598971

200609
 15

PRAI JP 2004-103247 A 20040331
 WO 2005-JP4678 W 20050316

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 GI



AB Disclosed is an organic **electroluminescent** device material which is a metal complex having a specific ligand. Also disclosed is an organic **electroluminescent** device using such an organic **electroluminescent** device material and having high luminous efficiency and long life. Further disclosed are a display and an illuminating device resp. using such an organic **electroluminescent** device. The organic **electroluminescent** device material is characterized by containing a metal complex having a ligand represented by the following general formula I.

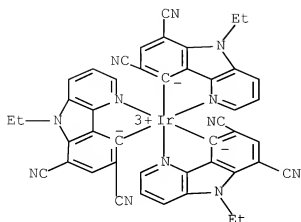
IT 867000-99-5

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic **electroluminescent** device material, organic **electroluminescent** device and display and illuminating device)

RN 867000-99-5 HCAPLUS

CN Iridium, tris(6,8-dicyano-5-ethyl-5H-pyrido[3,2-b]indol-9-yl-
 κC9,κN1)- (9CI) (CA INDEX NAME)



- IC ICM C09K011-06
ICS H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 74
- ST org **electroluminescent** device material display
illuminating
- IT Luminescent substances
Optical imaging devices
(organic **electroluminescent** device material, organic **electroluminescent** device and display and illuminating device)
- IT **Electroluminescent** devices
(organic; organic **electroluminescent** device material, organic **electroluminescent** device and display and illuminating device)
- IT 2085-33-8, Alq3 4733-39-5, BCP 58328-31-7, CBP 123847-85-8,
 α -NPD 867000-86-0 867000-87-1 867001-03-4 867001-10-3
RL: DEV (Device component use); USES (Uses)
(organic **electroluminescent** device material, organic **electroluminescent** device and display and illuminating device)
- IT 867000-82-6 867000-83-7 867000-84-8 867000-85-9 867000-88-2
867000-89-3 867000-90-6 867000-91-7 867000-92-8 867000-94-0
867000-95-1 867000-96-2 867000-97-3 867000-98-4
867000-99-5 867001-00-1 867001-01-2 867001-02-3
867001-04-5 867001-05-6 867001-06-7 867001-07-8 867001-08-9
867001-09-0 867001-11-4 **867001-12-5** 867001-13-6
867001-14-7 867001-15-8 867001-17-0 867001-19-2 867001-21-6
867001-23-8

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(organic ~~electroluminescent~~ device material, organic ~~electroluminescent~~ device and display and illuminating device)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 28 OF 28 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:275729 HCAPLUS Full-text

DN 142:363421

TI Amorphous metal complex dendrimers and thin-film organic ~~electroluminescent~~ devices using them

IN Maruyama, Sumio; Kawanishi, Yuji

PA National Institute of Advanced Industrial Science and Technology, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

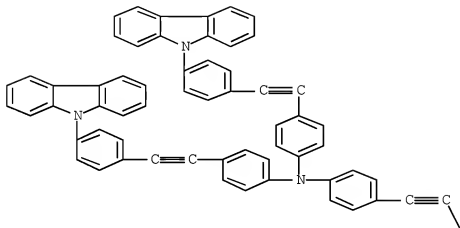
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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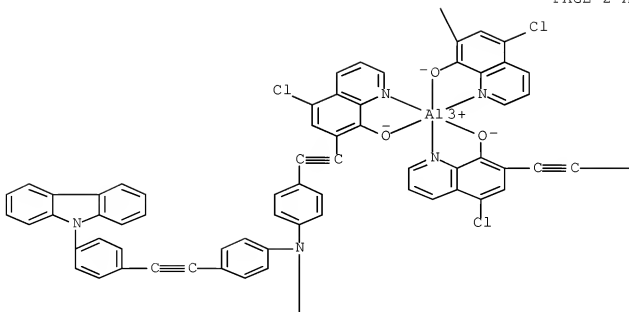
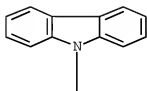
PI JP 2005082580	A	20050331	JP 2003-319858	20030911
JP 4210754	B2	20090121		
PRAI JP 2003-319858		20030911		
OS MARPAT 142:363421				
AB The dendrimers are tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals with C1-8 alkyl substituents and metals selected from Al, Zn, Be, Ge, Mg. The dendrimers are capable of forming films by wet process, e.g., coating, because of good solvent solubility				
IT 849110-50-5P				

10/598,971

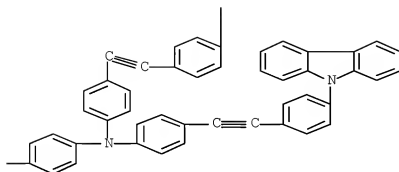
quinolinolato-κN1,κO8]-, (OC-6-22)- (CA INDEX NAME)

PAGE 1-A

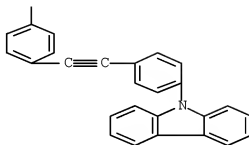




PAGE 2-B



PAGE 3-A



- IC ICM C07D401-14
ICS H05B033-14; C07F005-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 78
- ST amorphous carbazolyl phenylethynylphenyl aminophenylethynyl quinolinolato metal org **electroluminescent** device; solvent soly **electroluminescent** carbazolyl phenylethynylphenyl aminophenylethynyl quinolinolato metal; metal complex dendrimer org **electroluminescent** device
- IT **Electroluminescent** devices
(amorphous tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals for thin-film organic **electroluminescent** devices)

- IT Luminescent substances
(**electroluminescent**; amorphous
tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato]metals for thin-film organic **electroluminescent**
devices)
- IT 849110-50-5P
RL: DEV (Device component use); IMF (Industrial manufacture); TEM
(Technical or engineered material use); PREP (Preparation); USES
(Uses)
(amorphous tris[bis[(N-
carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato
]metals for thin-film organic **electroluminescent** devices)
- IT 7439-95-4D, Magnesium, tris[bis[(N-
carbazoyl)phenylethynylphenyl]aminophenylethynyl]haloquinolinolato]
complexes 7440-41-7D, Beryllium,
tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynyl]haloqui
nolinolato] complexes 7440-56-4D, Germanium,
tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynyl]haloqui
nolinolato] complexes 7440-66-6D, Zinc,
tris[bis[(N-carbazoyl)phenylethynylphenyl]aminophenylethynyl]haloqui
nolinolato] complexes
RL: DEV (Device component use); TEM (Technical or engineered
material use); USES (Uses)
(amorphous tris[bis[(N-
carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato
]metals for thin-film organic **electroluminescent** devices)
- IT 848601-43-4P 848601-44-5P 848601-45-6P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
(amorphous tris[bis[(N-
carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato
]metals for thin-film organic **electroluminescent** devices)
- IT 4181-20-8, Tris(4-iodophenylamine) 262861-81-4 691896-89-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(amorphous tris[bis[(N-
carbazoyl)phenylethynylphenyl]aminophenylethynylhaloquinolinolato
]metals for thin-film organic **electroluminescent** devices)

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